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Caesarean Section in the Bovine*

By

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TUNBRIDGE WELLS

Caesarean section was well known in the civilizations of Greece and Rome and there are very many references to it in the human subject by contemporary writers. Presumably the operation immediately followed maternal death and no doubt they sometimes applied the same methods to their animals. Only in comparatively recent times has it become possible to perform the operation and expect maternal recovery. Fleming mentions a case in 1813 where a cow survived the operation for 15 days—no mean feat if we consider the meagre facilities which must have been available in those days.

In the last few years caesarean section has become quite a widely performed operation in bovine surgery and has taken its place with rumenotomy and amputation of the digit as one of the major surgical interferences on bovines which are well worth while. Almost all operative techniques in the veterinary field have been standardized and one or possibly two methods are almost universally recognized as the most successful. This cannot be said of caesarean section; there are a large number of recorded successful cases and the techniques vary considerably.

My excuse for bringing forward this paper to-day is that I feel there must be many different views represented among us here this afternoon and I hope that in the discussion we shall hear something of the successes and difficulties which have come our way, and especially the views of members on such controversial points as the optimum anaesthetic and the most satisfactory site for the incision.

Though I am very firmly of the opinion that caesarean section has a definite place in bovine practice, obviously the suitable cases are relatively few and far between. Personally, I shall not again take on hours of hard work with not too good results entailed in lengthy embryotomies. If one considers that the foetus cannot be delivered with reasonable effort, then I think the case is one for caesarean section.

Indications may be classified as:—

(1) Immaturity. This is undoubtedly the main caesarean indication. From time to time we all see heifers from about 14 months to two years old trying to calve and unable to do so owing to the small size of the maternal pelvis. Personally, I have noticed that an undue proportion of these have been in the Sussex breed where the heifer has been stocked by the bull which was running with her dam. These cases are usually seen when the uterine contents are still in a reasonable condition; extensive embryotomy is often required to effect delivery *per vaginam*, and such cases offer the best hope of a successful caesarean section.

(2) Cervical non-dilation.

(3) Indurated *Os*.

(4) Congenital or acquired constrictions of the vagina.

(5) Gross swelling of the vagina.

(6) Abnormal presentations which cannot be altered by manual effort.

(7) *Schistosomus reflexus* or any other foetal abnormalities which cannot be delivered by prolonged embryotomy.

(8) Irreducible torsion.

(9) Gross emphysema of the foetus.

(10) Animals near calving unable to get up owing to debility. Straiton reported favourably on a series of cases of debilitated animals, all of which got up within a few days of the operation. Mr. Thonger and I operated on one such animal last winter—a pedigree cow—and removed two live heifer calves, but though she fed well the cow never looked like getting up and she was knackered a fortnight later. I cannot believe that the type of cow we see down from debility in this part of the country can be an economic proposition whether she gets up or not.

It is necessary that a decision to perform caesarean section should be made before irreparable bruising or damage has been caused by attempts at other methods. But the bovine peritoneum is so amazingly resistant that it is possible to perform the operation successfully in cases where similar conditions in small-animal practice would be bound to result in death.

A notable example of this are the cases of foetal emphysema. James recorded a case in a toxic heifer where he had estimated the foetus had been retained seven to ten days owing to an indurated *os*, and in spite of gross sepsis of the uterine contents, recovery was uneventful. I have in the past sent to the knacker one or two similar cases. I shall certainly try a caesarean next time if the owner is willing.

Having found our case, we now come to the question of the most suitable anaesthetic or combination of anaesthetics. The Animal Anaesthetics Act of 1919 requires the administration of a general anaesthetic for bovine laparotomy. This more or less restricts the legal choice of anaesthetic to chloroform, either alone or with chloral narcosis or intravenous chloral hydrate to the stage of general anaesthesia. We heard some discussion of the respective merits of these anaesthetics at the recent Congress in London; it is no doubt largely a matter of personal preference and confidence. Personally, I have used chloroform in all my bovine caesarean cases and found it to give a very satisfactory anaesthesia, the only drawback being the necessity of having a trained anaesthetist. Wright and many others strongly advocate the use of intravenous chloral hydrate and claim that it has many advantages, especially as the surgeon can induce anaesthesia before he starts the operation and then pay little attention to it. The chloral is injected by gravity into the jugular vein, using a 10 per cent. solution. The dose is about 6·5 grammes per 100 lb. body weight, in non-toxic animals. I have not used it myself. I have been rather afraid of serious sloughs following its use, and if one hopes to get a live calf its use is contra-indicated. No doubt in the discussion someone will be able to give us first-hand experiences of it.

Various writers have recorded their preferences for epidural, 40 to 60 c.c. of a 2 per cent. solution, regional block, or chloral narcosis with local infiltration.

SITES

The optimum site for the incision is not easy to decide. At least five different sites are possible:—

(1) The right flank.

(2) Lateral to the right milk vein.

(3) Median to the right milk vein.

(4) Lateral to the left milk vein.

(5) Median to the left milk vein.

What is required is a site from which the uterus can be readily brought into the incision and maintained there without undue strain on the operator or his assistant. Omentum, intestine and mesentery can be a very great nuisance in protruding from the abdominal wound and preventing direct access to the uterus.

Personally, I have found the left side incision very much more suitable than those on the right. One enters the peritoneum just along the lower border of the rumen and on pulling the omentum forwards the uterus is immediately exposed and can be drawn into the incision thus preventing the escape of abdominal viscera.

TECHNIQUE

No special instruments are required but I would stress the importance of plenty of large sterile cloths.

The animal is cast and restrained, lying on the right side, the upper, *i.e.*, left hind, leg is drawn backwards and secured.

An area is clipped along the left abdominal region from the udder anteriorly to the xiphisternum and from the mid-line to three or four inches above the milk vein. Chloroform is now administered and the operation site cleansed with spirit. Sterile cloths are applied and the incision is made from immediately in front of the udder anteriorly for about 14 inches, along a line two or three inches from and parallel to the milk vein. Several collateral branches of the vein are cut and need ligating. The incision is then made through all muscle layers and the peritoneum. The omentum now has to be drawn forwards; this may take quite an

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effort and if it does not come it should be incised. The gravid horn can now usually be seen, and should be pulled into the incision as soon as possible to prevent the expulsion of omentum and intestines through the wound. It has been suggested that sterile tapes can be used as slings passed round the pregnant horn to hold it in the incision. Personally, I have found that, using this position for the incision, once the uterus is in the wound it will remain there. The horn is now incised, taking care to avoid the cotyledons if possible, and if the uterine contents are likely to be infected every possible precaution should be taken to prevent escape of uterine fluids into the peritoneal cavity. This is where plenty of large sterile cloths are so essential.

The hocks of the calf are normally in the incision. The hind feet are withdrawn and the calf pulled out. An assistant grasps the edges of the uterine incision to prevent it falling back into the abdominal cavity.

The placenta should be separated and removed if possible. It usually comes away quite easily.

The uterine incision is closed by a double row of Lembert sutures, using thick chromic gut. The peritoneum is closed by a continuous gut suture, the internal oblique muscle is closed by interrupted gut sutures and the external muscle, fascia and skin are closed together by tape mattress sutures, taking care not to tie off the subcutaneous abdominal vein.

Eight c.c. of pituitrin is now given intramuscularly to help involution of the uterus and to combat shock.

Shock appears to be severe, specially in cases which are operated on in early stages of labour and where the placenta has been rather firmly attached. It results in deaths in cases where one confidently expected recovery. It is marked that Professor Wright has given it as his opinion that chances of maternal recovery may be improved by delaying operation for a few hours to allow some separation of the placenta to take place.

Other causes of fatal results are peritonitis, metritis, toxaemia and hernia, while I was unlucky enough to lose one case from a gas gangrene of the abdominal wound caused, I am sure, from contamination from my arms, as I had unfortunately removed a particularly effective gassy cleansing previous to being called to the heifer.

Sterilized sulphanilamide in the uterus and wound is no doubt helpful in keeping down serious infections and the animal can be given a course of sulphanilamide therapy for three or four days following the operation. American authors report favourably on the use of one pint of liquid B.I.P.P. poured into the uterus after the removal of the placenta.

The difficulties which arise with the operation are due solely to the size of the patient. Technically it is no more difficult than in small-animal surgery. But the weight of the uterus and the conditions under which one is called on to perform the operation do combine to make it quite a formidable undertaking.

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Discussion

Mr. J. W. Bruford: It was with great pleasure that he rose to open the discussion on Mr. Sutton's paper. He would like to compliment Mr. Sutton very much on the great care with which the paper had been prepared and also thank him for introducing a subject which might have some future and should at least provoke a very good discussion. Really it was comforting to feel that at last the Association was discussing the individual animal and not the herd problem, as they had done for the last five years. He thought that the meeting would now have a chance of getting a really good discussion going.

He was particularly interested by the suggestion put forward that the operation of caesarean section was widely performed and that it took its place in bovine surgery with rumenotomy and amputation of the digit. He felt that he could only agree with this classification in respect of one point and that was just when one should start on an operation of this nature. He found that it was extremely difficult to make up one's mind when a digit should be amputated and when rumenotomy was likely to produce the piece of wire or nail from a cow. He wished to ask Mr. Sutton how many calving cases he had attended during the last few years, which had ended fatally, and which now, on reflection, he felt he would have "got away with" had he performed the operation of caesarean section.

He was sorry that he had been unable to help very much in the actual carrying out of the operation in the full-term animal but he had carried out one such operation which had ended fatally. He thought it was of interest because the site which was chosen on that occasion was quite different from that chosen by Mr. Sutton. The case was in a cow coming down with her second calf and the owner called for help when, after 48 hours, the cow—according to him—ceased to strain any more. On examination two fingers could be inserted into the uterus but there appeared to be no torsion and in his own opinion there was no reason to suppose that the cervix would not eventually dilate. He then found that stilboestrol had already been given to the animal to bring about dilatation of the cervix and there had been no response. Having been called in particularly to do this operation and as the owner of the animal was quite satisfied in his own mind that the calf could not be delivered and wanted to see the operation done, he was foolish enough to plunge in. The site chosen for the operation was the right flank in a similar position to that chosen for rumenotomy on the left side. The anaesthetic used was epidural and paravertebral. There was very little difficulty in making the incision and pulling the omentum forward and there was no interference whatever from the intestines, but it was rather a weighty and hefty job getting the uterus up to the wound. However, once the uterus was in this position, the incision made in the uterine wall and the leg of the calf grasped there was no further difficulty in getting the uterus where it was wanted. The uterine fluid flowed over the wound and as far as he was able to tell none of the fluid entered the abdominal cavity. It so happened that the calf was alive and presumably no damage whatever was done if a certain amount of the uterine fluid had got into the abdominal cavity. After a fairly heavy struggle the calf was delivered alive and the uterine wound was sutured with No. 2 chromicized catgut by a double Lembert suture and, as Mr. Sutton had told them, the peritoneum with No. 2 chromicized catgut by continuous suture. The uterus and the wound had already been insufflated with sulphathiazole and proflavin. The muscles and skin were then sutured together with No. 8 nylon by an eversion suture (skin, muscle, muscle, skin, skin) and the edges of the wound turned out. The cow was apparently none the worse for the operation, and she has hardly moved at all. He felt quite justified in saying that the anaesthetic was adequate. The cow had not been feeding for three days before the operation was performed. She continued not to feed for five days subsequently. When he saw the animal again she seemed well and had no temperature; the wound as far as could be seen had healed perfectly. He therefore removed the sutures on the seventh day. Later the owner called him again because the cow had torn the wound open and was down. The wound was re-stitched but the cow did not recover and the owner sent her off to the knacker before a *post-mortem* examination could be arranged. This was the only caesarean operation he had carried out in a full-term animal and he would say now that he had very little doubt that if the animal had been left the cervix would have dilated and the calf been delivered quite normally.

There was another reason for doing this operation and one which he thought they would all agree was also of interest, and that was for the removal of a mummified foetus. He had been fortunate enough to operate on three such cases and also to see a fourth done. The fourth to which he referred was in fact the best and was carried out by Mr. Turnbull of Basingstoke. He would like to say that it was a revelation when he saw Mr. Turnbull operate: the operation was carried out perfectly. The site chosen was the right flank and the anaesthetic was paravertebral only. In a letter received from Mr. Turnbull just recently he reported that none of the cows on which he had operated had become pregnant.

His (Mr. Bruford's) first case had been in a cow where part of the mummified foetus had been removed and then the os uteri and cervix had closed and one hind leg was left behind in the uterus. In spite of loads of stilboestrol administered he was never able to remove the piece of foetus. Rightly or wrongly he decided to do a caesarean on this animal. The operation was quite simple and straightforward. The uterine wall was nearly two inches thick with the bone embedded in it. The animal never bred and on *post-mortem* examination there were masses of adhesions between the uterine horns and the body.

He thought that the interesting thing to note about all Mr. Turnbull's cases and his own was that on the removal of the foetus the animals had always returned to their normal ovarian cycle. In the two cows on which he had operated at the beginning of the year both animals had returned to their normal ovarian cycle and the veterinary surgeons in charge of the animals had reported that they believed both the animals to be in calf. In one of these two cases the veterinary surgeon had told him that about a month after the operation he had examined the cow and

thought that there were adhesions between the uterine horns. The same man now said that he was practically certain that the animal was three months in calf. It was a little surprising that it was impossible for anyone to say whether an animal was in calf at three months. Mr. Bruford, therefore, thought it was likely that he would hear later that the animal had a whole lot of adhesions as well as a metritis.

He did not know, but thought that there were some cases of mummified foetus which one could remove by the use of stilboestrol. He hoped that Mr. Hignett would be able to get up and tell them that this could be done in every case. However, it was quite clear that if one decided to do the operation the only justification for it must be that the cow bred again. It was of very little value to do a pretty operation and not have the cow breed again.

There was one other point which had just occurred to him. In the case where he had removed a live calf the calf was perfectly well for three days and was then found dead in the box. A short time before he had also removed a calf from a cow in the slaughter-house. This animal was just about due to calve and was obviously dying from acute traumatic pericarditis. The cow was shot and the calf was recovered. This calf lived for three days and then died. Did Mr. Sutton's calves survive after ceasarean section ?

He thought that he had taken up quite enough of the meeting's time. He would again like to thank Mr. Sutton for his paper and to support him in his hopes that everybody round the table would get up that afternoon and tell the rest of the members of their own experiences so that together they could thrash the matter out. He did not think that at the moment the operation had a very great future. If it were possible to do the operation successfully in the emphysematous calf he thought that the farming community would be very pleased to let the veterinary surgeon have a go. It was indeed certain that a technique as simple and straight-forward and attended by equally good results as the rumenotomy operation must be evolved if the operation were to be of practical value.

The President (Mr. F. A. Crowhurst): They had all listened with great interest to Mr. Sutton's paper which he had gone to a lot of trouble in presenting that afternoon. Mr. Bruford had very ably opened the discussion and sounded a note of caution. He trusted that as many members as possible would take part in the discussion in the hope that some views on the operation could be formulated.

General Discussion

Mr. Wright: He felt he must express his great pleasure in listening to Mr. Sutton's very able paper. There were several points which he would like to mention. He could not speak with any great experience in doing the caesarean operation in the bovine except that he had operated on one case with satisfactory results. The subject was a second calf light roan shorthorn in very similar circumstances to the one Mr. Bruford had just mentioned. This animal had been trying to calve a week before he was called. The *os* was completely closed and there was very little discharge, but what was present was evil smelling. He made a rectal examination and felt the calf's legs presented. He thought he should mention that the cow was given 40 mgs. of stilboestrol. Next day the *os* was slightly open and three legs could be felt. As he was rather keen to try the operation, and he had the assistance of Capt. Gillard, a caesarean was performed. The anaesthetic used was chloral (2 oz. in 1¼ pints of lukewarm water) intravenously. The patient was thrown by a rope and then given intravenous anaesthetic. The animal took the chloral very well and slept for three hours under the anaesthetic. A right flank incision was made almost as far as the udder. With regard to the site of operation, he would not choose the flank again because in his experience once the peritoneum was incised there was great difficulty in keeping the intestines and omentum from popping up. With the emphysematous dead calf there was much difficulty in getting the uterus into the incision. The calf was removed and the uterus was sutured with catgut, the peritoneum with catgut, the muscles with silk and the skin with silkworm gut, using continuous sutures. Next morning the animal was up and feeding. She made a good recovery apart from a slight discharge from the bottom of the wound which persisted for some months. The operation was carried out in July and the animal was seen again in the following February. She was not in good condition. He felt that she should have put on more weight: she had come from a healthy Shorthorn herd.

With regard to the decision whether to operate, he was sure that they had all experienced a case or two or more where the *os* would not dilate and the calf became emphysematous as day after day passed. He certainly felt optimistic about cases where the patient was definitely toxic and the calf had been dead for three or four days. In the case of the operation he had already described, the calf weighed 89 lb. when it was born. He would certainly encourage practitioners to go ahead with the operation rather than spend many hours trying to calve an impossibility. Even if the animal did not breed again the owner at least might fatten her. It did rather add to one's prestige in the farming community to save the bad calving case rather than give up and send an animal to the knacker. He had no experience of the caesarean operation in heifers that had stolen the bull.

There was one point which he would like to ask Mr. Sutton. In a case where the afterbirth did not come away very freely would it not be better to leave the afterbirth in and suture the uterus ? The reason he asked this was that he and Capt. Gillard had operated on a ewe before they had carried out the operation in the cow. In this case the operation was carried out in the right flank. Two live lambs were removed but there was great difficulty in removing the afterbirth: in doing this they almost turned the uterus inside out. They also had great difficulty in putting the uterus back again. He wondered if the same difficulty occurred in the bovine. He had felt after the operation in the ewe that they might have had a better result if they had closed the wound and let the ewe dispose of the afterbirth naturally.

Mr. S. L. Hignett: He thought he was being called upon to represent those who had never performed the operation on the bovine. He wished to take the opportunity of congratulating Mr. Sutton on his paper and Mr. Bruford on the very able way in which he opened the discussion. Both of these gentlemen had told the meeting of the mistakes they had made and the cases which had not gone according to the textbook.

He had noted that Mr. Sutton had referred several times to induration of the *os*. He was interested in various pathological conditions of the bovine cervix and would like to know whether Mr. Sutton and the meeting were happy in the opinion that one did frequently get a true induration of the cervix. The cervix did for the most part consist of connective tissue. Were we being misled when we saw signs of connective tissue and called it induration of the cervix ? It was possible that there was a hormone derangement which prevented proper opening of the cervix at parturition.

He would like to ask Mr. Sutton what percentage of cases on which he had operated had finished up successfully. In what number of cases had he been left with a live cow and a live calf, a live cow and a dead calf, a dead cow and a live calf, and with neither a live cow nor a live calf ?

Another practical point he would like to have made clear: he was still not quite certain how Mr. Sutton restrained the cow so that he had the maximum freedom at the site of operation.

Mr. Hignett also wished to be informed approximately how long the operation took. This was of vital importance from the practical point of view.

Finally, Mr. Bruford had said that he expected Mr. Hignett to get up and say it was a lot of nonsense that one could not remove a mummified foetus by the use of stilboestrol. He had used stilboestrol for the expulsion of a mummified foetus and some cases had been treated successfully. His physiologist and pharmacologist colleagues said that if he had had enough courage to use doses sufficiently high the foetus would always have been expelled. One or two had reported that following parenteral administration with no success, injection of stilboestrol in oil had been successful. In those cases where he had succeeded in expressing a corpus luteum he had always brought about the expulsion of mummified foetus.

Mr. Crowhurst: Mr. Sutton would like the meeting to discuss the optimum anaesthetic if this was possible.

Mr. Crawshaw: He could not contribute much to the discussion as it was rather a long time since he had dealt with a case. On one occasion a cow seen to be calving when out on the marshes, was brought up and found to be emphysematous. An operation was carried out under local anaesthetic, not under neural block, and the anaesthesia was very good. The site of incision was the right flank. He experienced no trouble with the intestines, although one or two other points were noticed at the time. It took a considerable amount of physical effort to remove the calf from the operation site as the calf was very large. Another point that had been noticed at the time was the speed with which the uterus contracted after the calf had been removed. Continuous gut suture was used for the uterus but by the time suturing was finished the wound was very small. He was afraid that he could not report that the animal had made a spectacular recovery. When first seen the cow was in a very toxic condition and had stopped straining. There was no hope of removal of the calf by the normal method.

He had once seen Professor Wright operating and chloral intravenously had been used, the dose being 5·5 to 6 gms. per cwt., not per 100 lb. as Mr. Sutton had described. There was a certain amount of difference in these dosages. The case on which Professor Wright had operated had been one of *schistosomus reflexus*. The site of the incision was low down on the right flank. No trouble was experienced with the intestines although difficulties had occurred in previous operations. This animal made a good recovery; it fed and was apparently quite normal.

Mr. Taylor: He had nothing to add to the information already given; he wished only to ask a number of questions. The first point which came to his mind was the question of starting the job at all. At the moment all these operations were done in dire necessity. Other things being apparently impossible, one decided to get the calf out. It seemed usual for such operations to be done in the spring when caution had been thrown to the winds. He thought it was necessary to clarify details of technique which seemed to cause difficulty. They all hoped that in the future when more of these operations had been done and one knew what the outcome was likely to be, operations could be carried out on animals in better condition. There would be better chances of live animals and calves afterwards. The fact that results seemed pretty hopeless at present was probably not really as bad as it sounded. The technique used was probably not so terrible but the cases were probably bad ones.

About the intrusion of intestines during the operation, although the legal way was to use a general anaesthetic people had performed the operation with the animal in the standing position. He imagined that the difficulties of intrusion of intestines would be lessened with the animal in this position. The abdominal pressure would probably be less in such cases and he would like those members who had tried the operation by this method to tell him if such was the case. People would have to make further attempts in the future on hopeless cases; should the operation be attempted with the animal standing or with the cow down under a general anaesthetic ?

The technical troubles seemed to be mainly adhesions and shock. Animals sometimes died from toxaemia. He thought if the animal was sufficiently healthy to live for a short time after operation, one could only say that death was due to shock. With more practice the operation would become very much quicker. In rumenotomy they had now halved the time taken for operation and reduced the shock thereby.

Regarding the point about fluid escaping into the peritoneum, again he thought that if escaping fluid was kept outside the peritoneum it would reduce the amount of shock. In this connection he wished to know where all the cloths which Mr. Sutton had mentioned were used in the operation. Were these inserted between the uterus and the peritoneum to mop up and block the passage of fluid ? Were the edges of the wound pulled out by a number of assistants all the time ? Was it easier or more difficult to control escaping fluid in the cast position ? He was inclined to think that in the standing position if the lip of the incision was pulled over the skin the fluid did naturally fall outside. A further point was, if one could rely on the suture holding the uterus for long enough to prevent any seepage, was there any real advantage in attempting to make the cut on the upper aspect of the uterus ?

Returning again to the question of shock, in Mr. Bruford's operation the placenta had not come out and so it had been left in the animal and the cow had expelled it the next day. He thought that if a placenta did not come away he would rather leave it in the uterus and as a rule the animal would deal with it.

Mr. Sutton had mentioned that he finished with a tape suture. Mr. Taylor said that he had never used tape in large animals. Were there any great advantages in its use ? He believed that ordinary nylon and silks held the skin together perfectly well and that nylon was a better agent at the moment than hydroscopic silks and tapes. He would very much like to have some answers from people who knew the subject better than he did.

Mr. Ingram: He could not speak on the subject from experience but wished to thank Mr. Sutton and Mr. Bruford for the very able way in which they had dealt with it. Concerning the question of removal of the placenta, he thought he could remember reading somewhere that certain workers preferred to leave the placenta in. This was favoured because it prevented the uterus contracting too suddenly; the animal, in the experience of these workers, did better. He had also been struck by the fact that Mr. Bruford had used nylon for suturing. In using thicker stuff was it not more likely to skid ?

Regarding the use of pituitrin, he could also remember reading somewhere or other that it hastened contraction too much, when contraction would occur of its own accord.

He was not sure whether Mr. Sutton preferred the right or left for the operation site.

Mr. CROWHURST: Could someone deal with the question of nylon used in bovine surgery?

Mr. BRUFORD: Since he had adopted the use of nylon in rumenotomy cases, and with it sulphathiazole and proflavine, all his cases had healed by first intention. It might be said that he had been a little more careful in preventing contamination of the wound. The differences from using silk anyway, had been most marked. He had found no difficulty or very little difficulty in tying the knots except on one occasion when doing a caesarean. On this occasion he had just got three sutures tied off when, for some reason or other, the cow coughed. The animal was just a little fidgety at having the needle stuck through the skin. He found that the nylon was quite easy to work with in using the eversion suture of skin and muscle together, and removing at ten days seemed to be just as good as one could wish.

Mr. TAYLOR, having been informed by Mr. Sutton that a "mattress" suture was another name for a "Halsted," said that he wished to mention two more points. In the prevention of adhesions in this operation would it be possible to cut off a piece of omentum and attach it over the incision to prevent later adhesions? Adhesions seemed to be the cause of future infertility.

He had noticed in both caesarean and rumenotomy operations the disastrous effects caused by the animal coughing. In rumenotomy, if an animal coughed one was covered with rumenal contents. Could one administer a drug to prevent an animal coughing for a short time?

Mr. BRUFORD: In most cases the coughing, he thought, had been caused by the administration of chloral in linseed oil half an hour before the operation.

Mr. MATTHEWS wished Mr. Sutton to tell them, in his reply, whether it was actually necessary to suture the uterus. It was eight or nine years since he personally had been engaged in any surgery and he was speaking entirely in ignorance. He did think that in the pregnant uterus when empty there was something to be said for neglecting to suture it at all. Even when the uterus was not entirely empty so long as the fluid was out and the uterus reasonably clean there might be some advantage in omitting to suture it. There might also be less risk of subsequent adhesions.

Mr. INGRAM: On the point of the calves dying after the operation, although he had not carried out the operation on live animals he had done it on animals slaughtered owing to disease (Johne's disease, etc.). He had heard that babies born by caesarean operation were very sluggish to get going. Might not the same thing be true of calves born in the same way?

Mr. CROWHURST thought it was very interesting that the calves should die three days after the operation. In two cases that he had seen shot at the slaughterhouse, live calves had been recovered. These calves had breathed and sucked but in both cases when the farms were visited afterwards the calves had died three days later.

The Reply

Mr. SUTTON thanked everyone for their contributions, from which he had learned a lot. He would attempt to answer their questions although he did not know all the answers as they seemed to expect. Firstly, there was Mr. Bruford's query as to whether caesarean operation could be classed in the same category as rumenotomy or amputation of the digit. In the past few years there had been five cases of caesarean operation in his practice; this was less than the number of rumenotomies only because of wire from flying bombs. He did not think that they would have experienced more than this number of rumenotomies from chance pieces of wire from other sources. He had amputated three digits in the five-year period.

He was glad to hear that Mr. Bruford had difficulty in deciding when to do these operations. With regard to the caesarean, he thought if one went to a calving case and felt that one might have to stay there all day and struggle, it would be just as well to do a caesarean. The Americans had reported enormous numbers of these cases. Frank reported doing 58 operations in two and a half years with 56 per cent. of recoveries. Taking them all in all, this worker classified something like ten as cases *in extremis* when he began the operation. Straiton, of Stafford, had reported on a series of 19 cases, mainly in debilitated animals. Mr. Sutton had also heard at the Congress recently that Mr. F. B. John, of Carmarthen, was definitely doing caesareans instead of embryotomies as a routine and claimed very good results, having got two cases in calf again following the operation.

He had encountered only one case where the calves were alive at the time of operation. This had been the cow with twins. She was not in labour and a fortnight off time. The calves were little and sickly and both died the following day. They were both premature and weakly and he did not think their deaths had anything to do with the operation.

He was very pleased to hear that Mr. Wright had experienced an emphysematous case which had got better; such cases gave one courage. He had tried a case a week before the meeting. The animal was in labour four days and the head of the calf was in the vagina and the *os* was closed tightly on it. The cow was obviously too toxic to go to the Ministry of Food and pass inspection so he carried out a caesarean on her. The calf had both its front legs back when the incision was made and Mr. Thonger had to repel its head through the *os*. Mr. Sutton said that he had wrongly called this indurated *os* and was grateful to Mr. Hignett for mentioning the matter. For practical purposes what he was referring to were the cases where the cervix had no doubt dilated and closed again due to failure of attention at the proper time.

As to the question of leaving the placenta in, all the people who had written on the subject stated that the placenta should be removed if possible. He was not at all happy about this. He thought that the suggestion to leave it in was perfectly sound. In cases where there had been trouble in detaching the placenta the animal generally died. In future he felt that he would not use force in peeling off the placenta.

Regarding restraint, when using chloroform he usually got an assistant to restrain the animal's head. The animal was then simply lying on its side under chloroform and the upper hind leg was drawn backwards and tied up to a stake or chain to stop the cow attempting to drag the leg forward.

With regard to the number of living and dead patients and calves, he had carried out five operations. One cow recovered, one which was operated on standing died of shock, one died of gas gangrene of the wound which was perfectly clean inside and a fourth case was the cow which had twins. This case was down in the first place, never showed the slightest ability to get up and was knackered a fortnight later. A fifth case was an emphysematous one and died of peritonitis. Amongst the calves he had mentioned only one case in which the calf was alive at the time of operation; all the others were dead.

The emphysematous case, which was the last operation, took two hours from the time of arrival to the time of driving out of the farm. This was the only operation he had timed particularly. He knew that some of the other operations had taken longer periods.

He thought the answer to Mr. Taylor's enquiry as to when the operation should be started was that one should start when the position was otherwise hopeless. In the cases where he had given epidural and paravertebral anaesthesia, due to his own mistake the paravertebral was not successful and the anaesthesia was not very good. In standing cases one was bound to open the flank fairly high up or the intestines would fall out. There appeared to be a nasty void and right down at the bottom was the pregnant uterus. The things that Mr. Thonger said as the uterus was hauled out did not encourage him to attempt the operation again in this way. It was quite a feat to hold the uterus up and he did not think this operation was at all successful. Difficulty was also found in draining the uterine contents. The incision was too high to get the fluid to pour out of the incision. One could not pull the uterus through; it could only be pulled up to the wound. This animal died quicker than any of the other cases.

Concerning the use of cloths, once the animal was on its side the cloths were put in position before the uterus was opened. He put cloths over the lower muscle wound and into the peritoneum, pulling the uterus up closely against them. One could not prevent some of the fluid running in. His most successful case from the drainage point of view was the old cow that was down with twins. This operation had been carried out on the right flank and was operated on as she lay. In this case the uterus, with the pressure of her weight upon it, was forced right into the incision. As she was not in labour it would not have mattered a lot if the contents had got in. So far as the drainage of the uterine contents went, the rate of involution was simply amazing and he did not think it mattered a scrap whether one opened the uterus on the top or at the bottom. In those cases which had been examined *post mortem*, the size of the uterus was halved in 48 hours and scarcely showed where incision had been. However, he did not think he had enough courage to take Mr. Matthews' advice. Undoubtedly the uterus was an amazing organ to contract and halve its size in such a short time.

With regard to the use of tape or nylon, he had used tape because it was fairly thick and less likely to cut. He was willing to try nylon next time. Pituitrin he had given; perhaps it reduced the shock.

Concerning the site of operation, he had tried sites all round and he thought the most satisfactory was the left side below the rumen. When the cow got up again in all probability the lower edge of the rumen would cover the wound and one was less likely to get a hernia.

He thought that covered all the questions, but before finishing he would like to ask Mr. Hignett whether it was wrong to call the *os* indurated when it was closed down and gone hard. Was this a technical inaccuracy?

Mr. HIGNETT: He could not answer Mr. Sutton's question. From the examination of a number of specimens he would say that there were no doubt cases where one did get induration of the cervix to a sufficient extent to cause trouble.

Mr. SUTTON: Certainly the condition was not a clear one in most cases.

Mr. Bruford had asked how many cases he had experienced which had gone wrong by other methods. He could think of only three such cases since he came to Tunbridge Wells—*i.e.*, roughly six years previously—that might perhaps have done some good with caesarean operations. One case was a heifer which had a closed cervix. He had plugged away with stilboestrol and eventually the animal did open the cervix enough to insert a hand and with lengthy embryotomy twins were removed. The animal died four or five days later. The owner was obviously dissatisfied at nothing more being done than treatment with stilboestrol. He had one further case of a heifer, 15 months old, which also died after embryotomy. There was a case of a heifer in which he tried to manipulate mal-presentation; the animal had such a gross oedema of the vagina that nothing more could be done. From the economic point of view he was sure that such animals were better in the Ministry of Food. These were the only three cases which he could recall. Of the five cases of caesarean operation he could not claim that any were practical propositions, certainly not the cow that was down.

Mr. BRUFORD: Mr. Matthews had just suggested to him that one could place one's hand in the abdomen of the bovine with a fair amount of impunity. He wondered if the incision of the right flank for the correction of torsion was a practical proposition? Could one do this, stitch up the cow and try allowing her to calve or would torsion occur again? If this happened there would be another excuse for performing a caesarean but he would like to know what was likely to happen if torsion were corrected and one waited for the cervix to dilate.

Mr. HIGNETT: He believed there were on record cases where people had corrected torsion by laparotomy in the bovine. Whilst on the subject he might mention that he knew of two people who corrected torsion of the uterus with the animal in the standing position.

Mr. BRUFORD: Torsion did occur with a partly dilated cervix.

Mr. HIGNETT: The man to whom he referred would correct torsion when one could hardly get a hand into the vagina. Several practitioners in Cheshire told him that this veterinary surgeon would come along and correct these cases.

Mr. BRUFORD: He would like to know whether this was possible; did Mr. Hignett know how it was done?

Mr. KELLY: He wished to confirm Mr. Hignett's statement; it was a fact that this could be done. In reply to Mr. Bruford, this veterinary surgeon corrected the torsion mostly per rectum. When Mr. Bruford said that he could not understand how this could be done with a hand in the vagina, Mr. Hignett replied that he believed that it was just a matter of physical strength.

Mr. WRIGHT: He would like to know if anyone else had any experience of a veterinary surgeon he had known who had given up rolling cases and adopted the method of leaving the animal alone. This particular veterinary surgeon claimed that in a good many cases the torsion corrected itself, and that if he had left them alone the cases which he had rolled would have corrected themselves. Mr. Wright wished to know whether anyone else adopted such methods and had experience of the uterus resolving itself into a normal position.

Mr. TAYLOR: He wished to raise a different point. Mr. Hignett remarked that in several cases of mummified calf where a corpus luteum had been expressed the expulsion of the calf had been successfully accomplished. Could one insert a hand into the peritoneum and express a corpus luteum? Would this always be successful?

Mr. HIGNETT: Experimentally, he had operated on a certain number of animals and removed a corpus luteum and brought it outside the animal's body because they had wished to implant it in another bovine. For this operation he had always gone through the anterior vagina.

Mr. SUTTON: American workers suggested that the expression of the corpus luteum at the end of the caesarean operation was perfectly feasible through the flank. He was very anxious to try the next hydrops case he encountered.

Mr. BRUFORD: He had noted that hydrops cases almost invariably died from shock.

Mr. SUTTON: The last few he had seen had died before they reached the stage of calving. The last case he had attended was in an old Shorthorn cow which got bigger and bigger daily and was only able to stagger about. Stilboestrol did not work and he could not reach the corpus luteum. If one could have got the calf out of her she would have made a useful barrener in three to four months' time.

Mr. BRUFORD: His hydrops cases did eventually calve. He had a case at that time which was perfectly well but very large. He was enquiring about such cases as he wished to know what was likely to happen.

Mr. SUTTON: He thought such a case as Mr. Bruford's would eventually calve quite normally. He would only do a caesarean when a case had reached the stage where the animal could not get up as much as six weeks before it was due.

Mr. HIGNETT: Most of these operations were only carried out when heroic measures were necessary. Expressing the corpus luteum of pregnancy involved a far greater risk of haemorrhage than expressing a corpus luteum in the non-gravid genitalia.

Mr. TAYLOR: He wished to ask Mr. Hignett whether he would express the corpus luteum of a cow with a mummified calf or do a caesarean.

Mr. HIGNETT: He would be inclined to express the corpus luteum.

The Recurrence of Nematode Infections on "Rested" Pastures

By

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It is a common practice to rest sheep-sick pastures as a means of reducing the risk of gastro-intestinal infections, for the larvae of Trichostrongyles die off naturally within a few weeks and seldom survive many months. It might have been expected, therefore, that a pasture rested from sheep for a number of years would have become free from infective larvae pathogenic to these animals; the following experiment shows, however, that in certain circumstances this is not the case.

In 1937 the writer[1] showed that goats pastured at the Institute of Agricultural Parasitology had acquired natural infections with *Trichostrongylus retortaeformis*, a common parasite of rabbits. He has since found natural infection in sheep also. Ortlepp (1939)[2] experimentally infected rabbits with *T. colubriformis*, a common parasite of sheep.

To determine what part wild rabbits play in nature, the following experiment was carried out: Three plots on a sheep pasture frequented by wild rabbits, each of approximately one-quarter of an acre, were wired off. Plot 1 was wired with rabbit-proof netting. Plots 2 and 3 were wired with sheep-proof netting. For four years Plots 1 and 2 were mown yearly and sheep were grazed on Plot 3. A goat was then pastured on each of the three plots. These goats had been hand-reared from birth and always kept under strict conditions in animal houses. Examination of their faeces by the floatation technique revealed only a slight infection with *Nematodirus* in the two goats which were placed on Plots 2 and 3. The goat on Plot 1 was negative. Four months later the goats were killed and the worms collected were counted. The species and number of worms found are shown on the accompanying table.

Parasite	Plot 1 goat	Plot 2 goat	Plot 3 goat
Trichostrongylus axei	—	—	300‡
Ostertagia circumcincta	—	27	275‡
O. trifurcata	—	2	—
• *T. vitrinus*	—	7	60‡
• *T. colubriformis*	—	3	—
• *T. retortaeformis*	—	66	40‡
• *Trichostrongylus spp.*	2	88	160‡
Capillaria longipes	—	5	17
Nematodirus sp.	1	1	20
Bunostomum trigonocephalum	—	—	17
Chabertia ovina	—	2	17
Oesophagostomum venulosum	—	1	3
Trichuris ovis	—	15	23

• The number of males of each species is given separately but as it is not possible to recognize the females of the different species of *Trichostrongylus* only the total number of females found is recorded.

‡ Estimated total based on the examination of one-twenty-fifth part of the abomasal contents.

‡ Estimated total based on the examination of one-twentieth part of the contents of the small intestine.

The *post-mortem* examinations show that the rabbit proofing of Plot 1 kept this portion almost completely worm free. In spite of the enclosure of Plot 2 with sheep-proof netting this pasture gave rise to infections with the species of the genera *Trichostrongylus, Nematodirus, Chabertia, Oesophagostomum, Capillaria* and *Trichuris*, which are unknown in wild rabbits, and with *T. retortaeformis*, a normal parasite of the rabbit which has only occasionally been found in sheep and goats. It is well known that the goat is a natural host of the same species of gastro-intestinal helminths as the sheep.

The above results indicate not only that sheep and goats on rested pastures can become naturally infected by *Trichostrongylus retortaeformis* from the faeces of wild rabbits, but also that they can acquire considerable infections with nematodes parasitic in sheep through mechanical transference of eggs or larvae, presumably by rabbits.

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Ortlepp, R. J. (1939.) "Can hares and rabbits act as hosts of sheep and goat bankrupt (*Trichostrongylus* spp.) worms in South Africa?" *J. S. Afr. vet. med. Ass.* **10**. 166-169.

Mr. Bruford agreed entirely with Mr. Hignett, and thought it was quite wrong to do a caesarean in the case of a mummified calf.

The President (Mr. Crowhurst) thanked Mr. Sutton for the paper he had given, which had been followed by such a good discussion. He felt he had listened to something which would be of great value to him. He hoped that everyone present had found it a useful meeting.

The Modern Outlook on Meat Inspection

By

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Meat Inspection or Hygiene of Meat and Meat Products originated as an important item of religious rites, whereby the divine law declared as unfit for sacrifice all carcases with visible lesions. This stage, based on macroscopic pathology, reached its peak by the end of the last century, to be followed by the great discoveries of Koch, Pasteur and others. Much meat which was formerly, from the macro-pathological point of view, declared fit for human consumption now had to be condemned. The discovery of food poisoning bacilli demanded a change in standards of judgment and consequently bacteriological as well as chemical examinations had to be introduced. On the other hand, many well-marked macroscopical lesions proved to have no harmful effect on the carcase and the health of the consumer. This, however, did not mean that jurisdiction in meat inspection had been finally settled, as can be proved by taking, as an example, the position in regard to the judgment of the flesh of animals found to be affected by tuberculosis. Carcases affected by this disease were formerly regarded as unfit for consumption under the meat inspection laws of many countries, but due to the new discoveries they began to receive special attention and the judgment passed on them became modified as increased knowledge permitted of more flexible regulations. For example, the German Meat Inspection Law passes such a lenient judgment that the consumer's natural revulsion to diseased meat is disregarded. In this country, Ministry of Health, Memorandum No. 62, Food, 1922, besides being unsatisfactory because its provisions do not have the force of law, remains rather conservative but introduces an element of compromise, by giving the veterinary surgeon a certain amount of liberty in passing final judgment. This unfortunately tends to lead to different judgment being passed on similar cases according to the Inspector's personal interpretation of the stage of the disease.

As stated above, the occurrence of so many fatalities caused by the ingestion of meat or meat products affected by micro-organisms belonging to the group of food poisoning bacilli necessitated the introduction of stricter measures. The lead in this new enterprise was taken by the German meat hygienists, probably because their country was the most badly affected as a result of the consumption of much raw or half raw meat and meat products. At the same time scientists such as Standfuss, Glasser and others were trying to solve the problem as to how food poisoning actually occurs. The results of their research introduced an idea completely new to meat inspection; that of "prevention." The scientists' verdict is that meat poisoning occurs only when living virulent bacilli enter the body of the consumer. If killed by high temperature, however, neither their residue nor their toxins remain harmful; in other words, an *ante-mortem* infected but sterilized carcase is fit for human consumption. Food poisoning infections occur *post mortem* in the majority of cases, however, and usually remain undetected during the examination of the carcase. To prevent these and all possible contaminations after the initial examination meat would have to be sterilized prior to consumption. This, of course, is a demand which never could be satisfied, except in canning, as it lowers the value of meat and disregards the culinary art of preparing raw or half raw meat dishes for human food. To protect the consumer other methods had therefore to be applied and it was prevention of *post-mortem* contamination which proved the most advantageous.

Thus in the meat inspection of to-day the duties of the veterinarian are threefold. He has to perform a thorough *ante-mortem* inspection of the living slaughter-animal; this being absolutely essential not only from the sanitary but from an economic point of view, it should be properly developed in this country. Then follows the actual *post-mortem* examination of the carcase. Both *ante-* as well as *post-mortem* examinations demand a wide knowledge of veterinary science, meat production and processing. Meat inspection to-day is not merely concerned with the detection of diseases but with the provision to the consumer of healthy as well as valuable nutriment. Finally, it is the duty of the veterinarian to prevent contamination which may occur during slaughter and dressing. To carry out this side of routine meat inspection many methods have been suggested, advertised and even ordered but so far none of them could fully satisfy the actual necessity. One thing, however, is beyond doubt; to ensure prevention of contamination the meat production plant must be so constructed and equipped as to diminish to a minimum the possibility of its occurrence, and further, transport and sale must satisfy present-day hygienic demands.

With this basic knowledge, then, a new drive began. Private abattoirs—a stumbling block to efficient meat inspection—were closed down; small public slaughterhouses were improved, modernized or rebuilt and new large central abattoirs erected, the last-mentioned complying with the present as well as future demands of hygiene and economy. This campaign differed in each country, but reached its most advanced development in Germany. Nevertheless, I cannot quite agree with a quotation in Ostertag's German textbook (1932, p. 25) according to which an English architect, Mr. Doddington, has paid high tribute to German abattoir engineering. This architect declares the Germans to be the pioneers in the building of modern abattoirs and stockyards and that by "following their example we cannot fail." A strict copy of foreign patterns is not always advisable. For instance, the German system of abattoir construction, although a good standard type for Germany, does not give the same satisfaction if applied abroad. This is not surprising as every country has its own specific needs in the meat trade which render it impossible to create a universal pattern of abattoir construction. A good result can only be achieved by making a careful study of the demands of the meat trade and the climate in one's own country and then, by taking advantage of other countries' particular achievements, drawing up a special plan of siting and construction. Close collaboration between the architect and the veterinary surgeon is absolutely necessary, as the latter knows best the requirements of a meat production plant, the meat trade and sound hygiene. It is not enough to erect an impressive building which will satisfy the layman's eye, but not the actual needs of smooth production and hygiene. By ignoring the veterinary profession and leaving the planning of abattoirs entirely in the hands of the builder many local authorities on the Continent have spent unnecessary money and have experienced difficulties in running the plant. This can easily be avoided by the selection of a small Committee consisting of at least two veterinarians and one or two architects. The Committee's work would be to prepare plans for a standard type of abattoir. By way of comparison with several countries known for their progress in this particular branch, very good results have been obtained on the Continent, and therefore a study-tour by the Committee would be advantageous.

Criticism of British abattoirs and meat inspection organization had come mostly from other countries hitherto, until this important subject recently found a hearing in Parliament. "Is he (the Minister of Food) aware of the disgust caused by recent revelations regarding the conditions prevailing in slaughterhouses?"; "Is he (the Minister of Food) aware of the public anxiety existing at the conditions prevailing in many slaughterhouses?"; "Is a national policy for slaughterhouses formulated?"—these were some of the questions asked by Members of Parliament. In replying to these enquiries the Minister of Food pointed out that he is well aware of the need for new and better slaughterhouses, but he fears that he cannot expect to get very high priority for them in the building programme. (*Vet. Rec.*, Nos. 5 and 6, February 1st and 8th, 1947.) There was another question worthy of note concerning the "unsatisfactory position in this country with regard to the inspection of meat and conditions of slaughterhouses owing to the fact that responsibility is divided between the Ministries of Food, Agriculture and Health. Will he (the Minister of Food) arrange at an early date for consultation leading to a more effective co-ordination of the work and ensure better conditions generally in slaughterhouses?" The reply of the Parliamentary Secretary, Ministry of Food, to this question shows that the Government appreciates this necessity and that a long-term policy for the slaughtering of livestock is being worked out in consultation with the Departments concerned. (*Vet. Rec.*, No. 6, February 8th, 1947.) If this is done with the help of the veterinary profession the results should prove to be successful.

To relieve overcrowded slaughterhouses by reopening those which have been closed during the war, as suggested by a Member of Parliament, means nothing but a relapse towards the old evil; no one who knows anything of these places and who desires hygiene and prevention of cruelty to animals will desire the realization of this plan.

While on the subject of "prevention" in meat inspection, one must not overlook the present state of transport and the handling of meat which takes place from the abattoir to the retailer. The Public Health (Meat) Regulations, 1924, Part VI, do not take into consideration all the requisite details concerning present demands for prevention of contamination of meat. For example, provided the meat is protected by a clean covering, the use of an open vehicle is permissible—a practice which may expose the meat to *post-mortem* infections with pathogenic bacteria.

Therefore, however healthy the slaughtered animal may be or however careful the examination and inspection, the danger of the meat becoming contaminated with organisms deleterious to human health will remain until abattoirs, transport and handling of meat are brought up to the present requirements of hygiene and prevention by legislation uniform throughout the country and supervised from one central Department by members of the veterinary profession.

THE VETERINARY RECORD

May 24th, 1947

A CHALLENGE ACCEPTED

IT is now several months since the Council of the National Veterinary Medical Association decided that it could not accept for publication an advertisement received from the Ministry of Agriculture concerned with recruitment to the professional personnel of its Animal Health Division unless some improvement were made in the proposed salary scales. Since that time, the Association has continued its efforts to persuade the Minister to change his mind and to overcome the subsequent impasse, but without success, and we understand that advertisements are shortly to appear in lay papers. So convinced is the Association that it has followed the right course in vigorously opposing the proposed scale of salaries, and so convinced is it that the scale will not attract into the Animal Health Division good men in sufficient numbers, that it has decided to withdraw its refusal to accept the advertisement and is prepared to publish it free of charge in *The Veterinary Record*, retaining its democratic right to continue to express its dissent from the imposed scale of salaries and to advise its members and the public accordingly.

At a recent delegation received by the Minister of Agriculture and the Financial Secretary of the Treasury from the Parliamentary and Scientific Committee, parliamentarians and representatives of interested scientific societies, including the National Farmers' Union and the Royal Agricultural Society of England, strongly recommended an improvement in the salary scales offered to veterinary officers in the Ministry of Agriculture. In the light of their views the Minister agreed to reconsider his earlier decision, but did not offer much hope of immediate adjustment. The deputation were told that there was no inherent difficulty in the Treasury agreeing to improvements in the salary scales if a sufficiently strong case were put to them. It emerged from these discussions that should the Minister advertise the posts and receive an insufficient number of applications, there would be every justification for the Parliamentary and Scientific Committee and other bodies to press again for an improvement in the proposed salaries.

This, we believe, will be the result of the Minister's advertisement. We are convinced that the rank and file of the profession will not wish to enter a Service which they know is a dissatisfied one and which they will appreciate does not offer them facilities for congenial work and advancement to a status which their professional training and experience demands. If, in spite of advice, there should be any recruits to the Service upon present terms, we feel they will rapidly become disillusioned. It is, therefore, heartening to feel as we do that no responsible member of the Association is likely to respond to the Minister's advertisement. Never before has the profession shown more clearly its appreciation of the need for good fellowship and unity to sustain it during the developments ahead in connection with progressive animal health measures, im-

provement in the facilities for veterinary education, and the passing of a Bill to control unqualified practice.

In conclusion, we would reaffirm that the whole veterinary profession in Britain is still anxious and willing to co-operate fully with the Ministry of Agriculture and all other interested bodies in the future developments of livestock improvement, animal health and disease control, but proper conditions of salary and status are vitally important to future success in this work. The individual veterinary officer must feel that he is an active member of a highly-trained scientific organization with conditions conducive to the recovery of his professional enthusiasm, the retention of his self respect and the execution of duties for the community which his education and training warrant.

CLINICAL COMMUNICATION

Two Cases of "Joint-Ill" in a Foal and a Calf Treated by Intracapsular Injection of Penicillin

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Case I

Subject.—A six-weeks-old Shire colt foal which had been under treatment for joint-ill in the near stifle for about 14 days. Restriction of movement in a loose box bedded with chaff and the administration of half an ounce of sulphanilamide followed by 1 drachm t.i.d. during this time had produced some abatement in the severity of the symptoms but results were disappointing. After three weeks' confinement of the animal the owner became impatient and turned him out with his dam.

About a month after the first signs of lameness, atrophy of the muscles of the limb was marked. The trochanter was prominent and the patella jutted out, giving a false picture of great enlargement of the joint.

At this time (early in September) it was decided to try the effect of penicillin in the hope that some information of value for the future would be obtained.

Procedure.—The skin on the outer aspect was close clipped and cleaned with several pieces of wool soaked in spirit and allowed to dry off. A Lang's needle was pushed into the joint at a point where some fluid could be palpated and about 5 c.c. of blood-tinged, cloudy fluid drawn off. A sample of this was sent to the Wellcome Physiological Research Laboratories who, in due course, reported that "no organisms were seen on smear preparations but inoculation of the fluid in a meat broth medium gave growth after 48 hours' incubation. This proved to be a pure culture of streptococci shown to belong to type C."

One hundred thousand units of penicillin in 20 c.c. of water (pyrogen free) were injected. This procedure was repeated on the following day and again on the fourth day. The temperature remained throughout 101·5° to 102°. Increased pain after injection gradually passed off and during the six weeks which followed a degree of progress seemed to have been achieved, but it was so slight that one could not but believe that a similar change could well have been attributable to the compulsory rest.

At this time, whilst resting a hand on the foal's hip, crepitus was felt and the animal was slaughtered.

Post-Mortem *Examination.*—This showed that the membrane of the stifle was virtually perfectly healthy. There had been no destruction of the surface at any point. Very slight localized flushing of the cartilage beneath was noticed but the impression gained was of a lesion about to be completely resolved.

The hip joint, on the contrary, was almost totally destroyed. The cavity contained some bloody pus and very little normal membrane remained. The underlying bone was exposed and in a state of active suppuration.

In this case it may be argued that from the commencement the stifle was not so badly affected as the hip, but it would be unlikely that a streptococcus once implanted in a susceptible tissue, should fail to leave its mark after six weeks.

The practical value of the experiment appears to depend on accessible sacs alone becoming affected.

Penicillin would appear to have a selective action on type C streptococcus which is the usual type encountered in the horse (Stableforth. *Vet. Rec.* **50.** 203).

Case II

Subject.—A pedigree Friesian heifer calf about three weeks old. The left elbow joint was distended with fluid. She was in considerable pain and all the joints were held in flexion.

The umbilicus was septic and the stump was enlarged, tender and oozing pus.

Treatment with sulphanilamide orally, and local surgical cleaning up of the stump made no impression on the lameness.

In this case no sample was taken from the sac—it seemed so hopeless—but nevertheless a single injection of 100,000 units was given after allowing a quantity of the pus to flow.

The calf was visited three weeks later when an amazing change was seen.

Movements at a walk were sound and it was only when the heifer was skipping round the small box that "carrying" of the limb was observed. There was little palpable fluid and the apparent enlargement of the joint was merely an accentuation due to muscular atrophy from disuse. After a lapse of two months the calf was indistinguishable from six fellows. Complete recovery of the musculature and absolute soundness in all movements had resulted.

The writer feels that treatment of any two cases of disease by a particular method cannot of course provide very much evidence, but considers that as the method of administering penicillin is unusual a reference to its use and effect is of some interest.

THIOUREA DERIVATIVE AS RAT POISON

"Some of the thiourea derivatives are highly toxic, and one has proved a useful rat poison," observes *The Lancet* in a recent annotation on the above subject and continues: "Richter[1] found that phenyl thiourea was as lethal as strychnine to rats though not very poisonous to man. Owing to its taste, however, it was not very acceptable to the rats as bait; so a search was instituted for a substitute. The final choice fell on a derivative, alpha-naphthyl-thiourea, a blue-grey powder, which clings easily to dry or wet surfaces, is very stable, and lasts some years without deteriorating, air and light not affecting it. Its melting-point of 184°C. allows it to be used in hot places. It is practically insoluble in water. Rats seem unable to distinguish any difference between poisoned bait and that not poisoned, when both are laid together.

"To be effective as a poison for rats, alpha-naphthyl-thiourea (Antu), which is recommended by the Ministry of Food,[2] must be consumed in a large enough dose (8 mg./kg. of body weight). Repeated sublethal doses have no cumulative action; on the contrary, they may produce some tolerance, which may last 30 to 40 days. The toxicity of Antu is greater to small mammals than to large mammals, and greater to carnivores than to herbivores. Among rats the toxicity is greatest to *Rattus norvegicus* (the brown rat) and least to *R. alexandrinus*, whereas *R. rattus* (the black rat) occupies an intermediate position. The toxicity to mice is about the same as to the brown rat. Domestic animals are equally susceptible, but the effects are minimized by vomiting (an action which rats are said to be unable to perform[3]). To poison man, Antu would have to be swallowed in a large quantity: no case of poisoning has so far been reported among makers or users in America, where 50 tons have been distributed to 150,000 farms. Nevertheless, precautions should be taken, such as colouring bait containing Antu, laying the bait in sites inaccessible to children and pets, and washing the hands after handling the bait.

"Antu acts only after ingestion. Contact with the skin is harmless, but if it is sprinkled on the rats' run they can be poisoned by licking it off their paws. The poison produces an intense pulmonary oedema, due to increased permeability of the capillary walls. McClosky & Smith[4] have reported fatty degeneration of the liver of the "nutmeg" type. A characteristic sign of poisoning is a lowered body temperature. Like the other members of the thiourea group, Antu in repeated small doses interferes with the action of the thyroid hormone."

1 Richter, C. P. (1945.) *J. Amer. med. Ass.* **129.** 927.
2 See *Lancet.* (1946.) ii, 950.
3 Bayley Bustamente, G. (1946.) *Prensa méd. argent.* **33.** 2550.
4 McClosky, W. T., & Smith, M. I. (1945.) *Publ. Hlth Rep., Wash.* **60.** 1101.

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Upon the nomination of Principal J. B. Buxton, Professor N. H. Scorgie, of the Royal Veterinary College, has been elected a member of the Royal Agricultural Society of England whose next show is at Lincoln early in July.

NEW INSTRUMENTS AND APPLIANCES

[The Editorial Committee desires to make this Section a regular feature of *The Veterinary Record* and would welcome contributions accordingly. Their publication, however, carries no implication that the instrument or appliance concerned is necessarily recommended by the Committee.]

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Infusion Apparatus

PETER J. DALTON, M.R.C.V.S.
EXETER

The dangers involved in udder infusion have been stressed in an article on penicillin recently published. It is obviously not practical to carry sufficient large syringes to use a sterile one for each infusion, and the present price and fragility of syringes entices busy practitioners to methods of sterilization other than boiling.

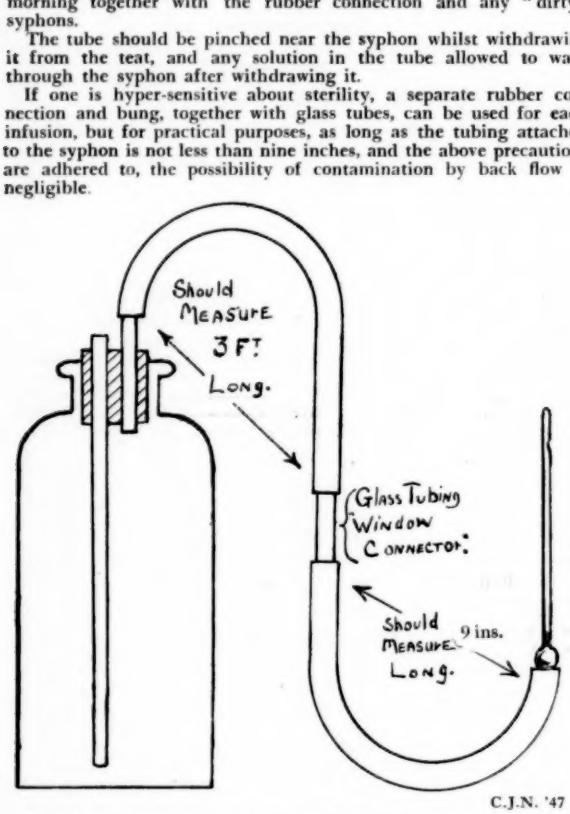
A simple, inexpensive and efficient apparatus is sketched below. The 100 c.c. containers in which manufacturers supply their biological products are ideal.

The rubber tubing should be of a narrow gauge to keep at a minimum the amount of solution remaining in it after infusion.

A stock of bottles containing distilled water can be boiled each morning together with the rubber connection and any "dirty" syphons.

The tube should be pinched near the syphon whilst withdrawing it from the teat, and any solution in the tube allowed to wash through the syphon after withdrawing it.

If one is hyper-sensitive about sterility, a separate rubber connection and bung, together with glass tubes, can be used for each infusion, but for practical purposes, as long as the tubing attached to the syphon is not less than nine inches, and the above precautions are adhered to, the possibility of contamination by back flow is negligible.



C.J.N. '47

The infusion is by gravitation and it is necessary to shake the bottle when inverted to clear air from the inlet tube and commence the flow.

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A Simple Incubator

PETER J. DALTON, M.R.C.V.S.
EXETER

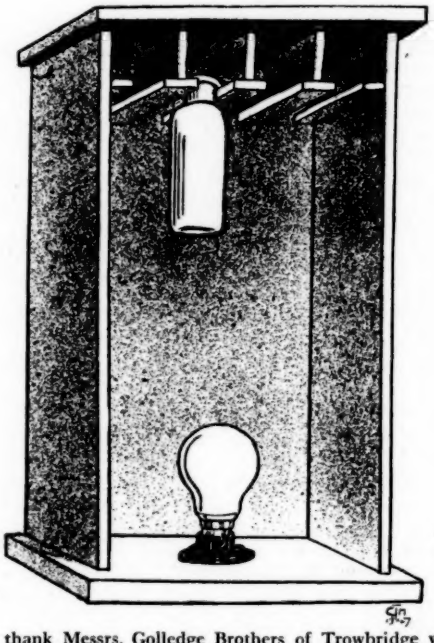
The value of routine milk sampling is even more marked with penicillin therapy than previously. Although much has been written about the clinical diagnosis of mastitis, it is impossible to diagnose the type of infection by any other means than microscopic, especially in cases of acute mastitis.

If milk samples are taken with proper care, and contamination is avoided, incubation of samples can be carried out by the practitioner and direct smears without centrifugalization will give excellent results.

It is simple to construct an efficient incubator as follows: A cabinet of plywood about 9 in. by 6 in. by 18 in. has an electric light socket fixed inside it. In the roof are nailed some strips of wood as shown in the diagram. One side of the box is removable, either hinged to form a door or simply held in place by elastic bands.

The sample bottles are hung inside the box and allowed to incubate for 12 to 24 hours, after which a direct smear will show plenty of organisms—and with a little experience one can arrive at an accurate diagnosis.

The temperature inside the incubator can be regulated by means of a rheostat, or by trying various bulbs until the correct temperature is obtained (37° to 39° C.).



I must thank Messrs. Golledge Brothers of Trowbridge who first showed me this incubator which has since proved invaluable to me.

REVIEW

["**A Centaur Looks Back.**" By Lt.-Col. V. C. LECKIE, D.S.O., R.A.V.C. (retd.). Hodder & Stoughton, 9s. 6d.]

We note from time to time in our reviews the appearance of books by members of our profession on subjects outside the strictly technical. As a description of the life of a general practitioner none so far has exceeded in accuracy and interest the novel "Dutch Vet," which we reviewed some years back. The book now under review comes under the heading of autobiography, and the gallant author writes of his life in the profession from his entry to Camden Town, through the years of his service in the Royal Army Veterinary Corps, to his well-earned retirement.

It is doubtful whether as a record of the life of a veterinary officer in peace and war, Lt.-Col. Leckie's book can be bettered. It is exceedingly valuable from the historic point of view, as the happy useful existence of a veterinary officer in the great days of cavalry, horse artillery and transport have all but ended. The book is delightfully written and has, we understand, met with a most favourable reception from the general public. With such literary expression at his command we hope the author may be persuaded to spend more hours of his retirement in producing further works for our delight and entertainment. The publishers have done their share in producing a most agreeable volume, and we particularly admired the simple yet dignified dust cover design and lettering. We recommend our readers to obtain this book unreservedly.

ABSTRACTS

[**I—Experimental Traumatic Shock Produced by Muscle Contusion with a Note on the Effects of Bullet Wounds.** Gregerson, M. I., & Root, W. S. (1947.) *Amer. J. Physiol.* **148**. 98-123.

II—The Relation of Blood Volume Reduction to Mortality Rate in Haemorrhagic and Traumatic Shock in Dogs. Wang, S. C., Overman, R. R., Fertig, J. W., Root, W. S., & Gregerson, M. I. (1947.) *Amer. J. Physiol.* **148**. 164-173.

III—The Role of the Extracellular Fluid in Traumatic Shock in Dogs. Holmes, J. H., & Painter, E. E. (1947.) *Amer. J. Physiol.* **148**. 201-210.]

Much of the work on experimental shock is carried out in dogs and is published in journals which are not readily available to veterinary practitioners. These three papers, all appearing in the same number of the *American Journal of Physiology*, have been selected for abstracting to indicate the type of work being done on this subject and also to draw attention to the mass of information which is being accumulated by physiologists and which may be of interest to the veterinary profession.

I. The clinical signs shown by dogs in which the thigh muscles have been contused were found to be identical with those in secondary shock in man—increased heart rate, fall of body temperature, vasoconstriction, changes in respiration, and depression of the nervous system. As in man, dogs in a condition of shock do not shiver in spite of lowering of body temperature: in both species there is thirst, and fluid given by the mouth is usually vomited. All the clinical signs of shock in man occur in the dog, with the exception of sweating. Gunshot wounds produced exactly the same train of symptoms.

Muscle trauma which reduced the blood volume by 30 per cent. or more always caused shock in dogs, and the animals usually died. Blood volume determinations made on dogs after contusion of the thigh muscles showed that in this form of traumatic shock there is no progressive decrease in blood volume: this was shown by the constancy of the haematocrit values and plasma protein concentration. These results are not in agreement with the commonly accepted view that the fundamental cause of shock is a general increase in the leakage of plasma through the capillaries. Subsequent work with chronic spinal dogs in which trauma was produced without general anaesthesia confirmed these findings and showed that the only decrease in blood volume was an initial one immediately following the injury.

II. Shock was produced in dogs either by simple haemorrhage or by trauma of the thigh muscles and the changes in blood volume were determined. Animals were found to succumb to shock even when only a negligible loss of circulating blood volume could be detected. This experience is similar to that in human medicine where some patients show severe shock after quite trivial injuries.

Comparison of the results of shock caused by trauma and by simple haemorrhage showed that loss of circulating blood volume alone is not sufficient to explain high mortality rate in traumatic shock. Most dogs subjected to trauma showed heart rates above 200 per minute almost at once, whereas animals subjected to simple bleeding reached this rate only after a few hours. In dogs subjected to bleeding the arterial pressure sometimes fell as low as 22 mm. Hg. during the first half hour, whereas animals subjected to trauma hardly ever survived if the pressure at this time after injury fell below about 70 mm. Hg. Depression of the nervous system was regularly observed after muscle trauma but not after haemorrhage. It is clear, therefore, that the mechanism in traumatic shock is not identical with that in shock caused by haemorrhage.

III. Measurements of the total volume of extracellular fluid (thiocyanate and electrolytic methods) in dogs subjected to muscle trauma showed no significant change during the period of traumatic shock. It was estimated that a volume of extracellular fluid equivalent to about 15 per cent. of the original blood volume can be made available for the dilution of the circulating blood in shock caused by muscle trauma. This additional extracellular fluid does not remain in the circulation, however, but leaks out from the capillaries into the damaged area: total extracellular fluid thus remains constant but the amount in the damaged area increases. Some workers have claimed that *large* doses of normal saline given intravenously cause clinical improvement and an increase in blood volume in dogs with shock: this may be due to an increased tissue tension in the area of trauma and elsewhere causing reduction in the loss of injected fluid and thus allowing some of it to be retained in the circulation.

E. G. W.

[**Vitamin A and Bone Growth: The Reversibility of Vitamin A Deficient Changes.** Mellanby, E. (1947.) *J. Physiol.* **105**. 382-399.]

This is a study of the recovery stage of bone growth following the restoration of vitamin A to an animal after a period of deficiency and is especially concerned with the cranial bones. The bones selected were the basi-occipital, the labyrinth capsule and the sphenoid, because they represented different types of bone growth.

Puppies were fed a basal diet of wheatmeal bread 30 to 280 grammes, salt 1 to 2 grammes, baker's yeast 5 per cent. of cereal, milk powder 20 grammes, lean meat 15 grammes, nut oil 10 c.c., ascorbic acid 5 mg., and vitamin D_2 200 to 2,000 i.u. Three seven-week-old litter-mate puppies were given the experimental feed for 26 weeks. One received in addition an abundant supply of vitamin A (2,000 to 5,000 i.u.), and another, after 24 weeks on the vitamin A deficient diet, was given abundant vitamin A for 23 days. Three other dogs similarly treated were examined less completely. Sections were cut from large blocks of decalcified bone at specially chosen angles. These experiments showed the general action of vitamin A on growing bone to be the control of shape, especially the fine moulding. The addition of vitamin A after a period of deficiency caused a return of osteoblastic and osteoclastic activity. The change in osteoclastic activity following deficiency was orderly. Although in general vitamin A deficiency caused general thickening and dysplasia, the method of production varied in the different bones studied. The recovery following the addition of vitamin A to the diet of an animal suffering from deficiency was also different. Alteration in shape of bones adjacent to the nervous system may destroy or injure the nerves but the changes subsequent to the restoration of vitamin A to the diet are independent of the condition of the adjacent nerve or nervous tissue.

F. A.

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[**Reproductive Failure and Agalactiae in Ergotised Female Rats.** Nordskog, A. W. (1946.) *Amer. J. vet. Res.* **7**. 498.]

The failure of sows to produce viable young or milk prompted further study of the effects of ergot on reproduction and milk secretion. Groups of rats were fed on ergot from rye, barley, wheat and grass (western wheat); in each case the basal ration contained 1·0 per cent. ergot. The author found that the ergot produced the same effect no matter what its source. No young were produced by rats fed ergot before the tenth day of pregnancy. Rats fed ergot at later stages of gestation gave litters with birth weights considerably below the birth weights of the control litters. Whether the actual deaths occurring in the ergotized litters were entirely due to ergot was not clear, since many losses occurred in the control litters. The author considers that these losses were due to the fact that the litters were the first the rats had produced. The effect of ergotoxine was studied in a similar manner. The alkaloid was fed to pregnant female rats in a diet containing 3 mg. ergotoxine/100 grammes. The young from females fed ergotoxine during pregnancy and lactation showed a greater mortality rate than those receiving ergotoxine during lactation only. Ergot had no effect on the oestrus cycle of rats or on the fertility of male or female rats. Palatability of the ration was impaired by 1·0 per cent. ergot and 3 mg. per cent. ergotoxine.

F. A.

A "BONE BANK"

A "bone bank," perhaps the first of its kind, has been set up at the Geisenger Memorial Hospital, Pennsylvania.[1] Dr. Leonard Bush, head of the orthopaedic department, has explained that surplus bone from such operations as osteotomies can be preserved indefinitely at a temperature of 10° F., and it will provide material for chip grafts, so eliminating one stage of the grafting operation. The value of a bone bank must depend on the kind of material available for storage, and this is likely to be limited to fragments which are partly compact and partly spongy. For filling in defects after trauma or the excision of tumours or cysts, these fragments will be quite satisfactory; for, though heterogeneous skin grafts[2] or nerve grafts[3] are unsuitable for transplantation after storage, on account of the foreign protein reaction they excite, with chip grafts it is a matter of indifference whether the bone survives or not. On the other hand, the special properties of living cancellous bone and of massive rigid cortical grafts will still make it desirable to obtain these from the patient himself.—*The Lancet.*

[1] British United Press Report.
[2] See *Lancet.* (1943.) ii, 449.
[3] *Ibid.*, p. 671.

QUESTIONS IN PARLIAMENT

Veterinary Officers (Status)

Lieut.-Colonel Bromley-Davenport asked the Minister of Agriculture, in view of the importance of improving the veterinary services of this country, when it will be possible to bring the status of veterinary officers of his Department up to that of the medical profession in this country.

Mr. T. Williams: If the hon. and gallant Member is thinking of salaries, the appropriate basis of comparison is not with the medical profession generally but with other civil servants in the professional and scientific classes. I am satisfied that the salaries recently fixed for my veterinary officers bear the proper relationship to those of other civil servants.

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Agricultural Advisory Service

Lieut.-Colonel Bromley-Davenport asked the Minister of Agriculture whether he will make a statement about the progress which is being made with the development of the Agricultural Advisory Service; and to what extent it will be in effective operation during 1947.

The Minister of Agriculture (Mr. Thomas Williams): The National Agricultural Advisory Service was set up seven months ago and is now in effective operation though not yet at full strength. The eight provincial centres are in being, and the county staffs have been integrated with the county war agricultural executive committee organization. In association with the provincial directors of the service the committees are playing an invaluable part in guiding the work of the county staffs and stimulating the interest of farmers and growers in the facilities the Service can provide. The work of the Service is under the general direction of a small staff of senior officers at Headquarters, who are closely associated with my Agricultural Improvement Council and through that body with the Agricultural Research Council. Owing to the severe and general shortage of suitably qualified men and women, the Service is at present one-third below strength; while building difficulties and shortages of scientific and other material are proving obstacles above all to the full equipment of the provincial centres and sub-centres. Everything possible is being done to resolve these difficulties and to bring the Service up to full strength and efficiency at the earliest practicable date.

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Fowl Pest

Mr. J. Morrison asked the Minister of Agriculture if he is satisfied that the veterinary staff is adequate in research stations to investigate suspected cases of poultry pest properly; and what steps he is taking to improve the position.

Mr. Tom Williams: Yes, Sir; but I am satisfied that in the majority of cases there is now no necessity to send carcases to research stations for examination. I am accordingly making arrangements for suspected outbreaks of fowl pest to be investigated by veterinary inspectors stationed in the area.

On May 12th Lord Willoughby de Eresby asked the Minister of Agriculture how many cases of fowl pest have been notified; how many birds have been slaughtered during the past week; and what are the results of the discussions between officers of his Department and of the Ministry of Food as to the possibilities of lessening the risk of spreading this disease through the importation of dead poultry.

Mr. T. Williams: The number of outbreaks of fowl pest confirmed up to May 8th is 166. During the past week about 1,500 domestic fowls, 180 ducks and 20 geese have been slaughtered because of fowl pest. As to the last part of the Question, arrangements are being made for trial shipments of eviscerated poultry to be brought from central Europe. Pending the results of these trial shipments, none but eviscerated poultry will be imported from any country in Europe where fowl pest is prevalent.

Lord Willoughby de Eresby: In view of the fact that these figures are still going up, will the right hon. Gentleman try to arrange with the Press and the B.B.C. that full publicity is given to fresh outbreaks, so that the country may be aware of the situation?

Mr. Williams: I can assure the noble Lord that we are using both the Press and the B.B.C. to notify both commercial and domestic poultry-keepers of the danger of this fowl pest.

Lord Willoughby de Eresby: Could this not be treated as foot-and-mouth disease is treated, so that far greater publicity is given as regards outbreaks in various parts of the country?

Mr. Williams: I can only repeat that we have invited the B.B.C. to give us all the assistance they can, and they have very readily agreed to do it.

Lieut.-Commander Hutchison asked the Minister of Agriculture if he will make fowl pest a notifiable disease under the Diseases of Animals Acts.

Mr. T. Williams: Fowl pest is a notifiable disease under the Diseases of Animals Acts. The requirements about notification are being revised so that, in future, poultry owners who suspect the existence of the disease amongst their birds will give notice to the police instead of to my Department's veterinary laboratory at Weybridge.

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Dairy Cows (Rations)

Lieut.-Colonel Bromley-Davenport asked the Minister of Agriculture whether he is aware that many farmers are dissatisfied with the allocation of rations for dairy cows during the present month; that in many areas, where pasture is not of first rate quality, the ration is insufficient to keep up milk production; and whether he will take steps to increase the ration during this and coming months.

Mr. T. Williams: I am not aware of any general dissatisfaction with the present scale of rations for dairy cows or that it is normally insufficient to keep up milk production. The reserves of feeding-stuffs placed at the disposal of W.A.E.C.s for issue at their discretion are primarily intended to provide supplementary rations for individual farmers whose milk output is affected by poor growth of grass, and applications by such farmers for supplementary rations for this purpose are accorded a high degree of priority.

Mr. Collins: Is my right hon. Friend aware that an increasing number of farmers are having milk returned to them because of alleged deficiency in butter-fat content? To avoid wastage in this matter, which is largely attributable to shortage and deficiency of feeding-stuffs for milking cows, can he make some temporary adjustment of the regulations governing the broad question of the quality of milk?

Mr. Williams: I can assure my hon. Friend that no complaints of the kind have been brought to my notice. Should any such complaints be brought to our notice, and we have supplies of feeding-stuffs available, we shall readily do our best to meet the needs.

Mr. M. Philips Price: May I ask the Minister what steps are being taken to increase rations for dairy cows by purchases of feeding-stuffs from abroad?

Mr. Williams: I think my hon. Friend is aware that we are buying as much feeding-stuffs from abroad as is possible, and that on May 1st rations for all kinds of animals were increased.

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Breeding Stock

Mr. Vane asked the Minister of Agriculture whether he is satisfied that as a result of the financial losses suffered by farmers due to last winter's bad weather, female stock which should be kept for breeding is not now being offered for sale for slaughter.

Mr. T. Williams: I have no evidence that any significant numbers of female stock suitable for breeding are being sold for slaughter. In view of the decrease in numbers of breeding stock the tendency would rather be to retain all suitable breeding animals or to sell them through the store markets for breeding purposes.

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Slaughterhouses (Inspectors' Visits)

Mr. Peter Freeman asked the Minister of Food why an inspector of the R.S.P.C.A. was refused admission to the slaughterhouse at High Street, Watford, without making a previous appointment; whether such conditions are in operation at other slaughterhouses; and whether he will give instructions that any qualified inspectors of the R.S.P.C.A. shall have admission at all times when animals are being slaughtered.

Mr. Strachey: All the slaughterhouse managers employed by the Ministry have instructions that R.S.P.C.A. Inspectors wishing to enter a slaughterhouse should be given every facility. It is not necessary for them to make a previous appointment. I think that my hon. Friend has been misinformed with regard to the incident at Watford to which he refers. My information is that the inspector entered the slaughterhouse and completed his investigations, but that he omitted to contact the slaughterhouse manager on entry.

Weekly Wisdom

I am convinced that our educational system hardly pays sufficient attention to teaching the younger generation about their fellow-citizens of the Empire and the countries in which they live, or their size. This should surely be changed, even at the risk of a boy being uncertain of the names of Henry the Eighth's wives.—The Duke of Gloucester, on his return from Australia.

NOTES AND NEWS

Diary of Events

May 27th.—R.C.V.S. Council Election. Voting papers to be returned.
May 28th.—Annual Meeting of the West of Scotland Division, N.V.M.A., in the Glasgow Veterinary College, 2.15 p.m.
May 28th.—Annual Meeting of the Ayrshire Division, N.V.M.A., at the Hannah Institute, Ayr, 2.30 p.m.
May 30th.—Meeting of the Royal Counties Division, N.V.M.A., at Oxford (Forum Restaurant), 2.30 p.m.
May 30th.—Meeting of the Sussex Division, N.V.M.A., at Brighton (Old Ship Hotel), 2.30 p.m.
May 31st.—Meeting of the Nutrition Society in the Barnes Hall of the Royal Society of Medicine, 1, Wimpole Street, W.1: Scientific Meeting 10.30 a.m.; Annual Meeting 2 p.m.
June 3rd.—R.C.V.S. Annual General Meeting.
June 3rd and 4th.—R.C.V.S. Committee Meetings.
June 3rd.—V.V.B.F. Annual General Meeting.
June 5th.—R.C.V.S. Committee and Council Meetings.
June 5th.—Central Veterinary Society Visits Lady Wentworth's Arab Stud at Crawley and Mr. E. G. Langford's farm at Lingfield. (See Notice.)
June 11th.—Meeting of the Editorial Committee, N.V.M.A., at 36, Gordon Square, W.C.1, 2.30 p.m. (Abstracts Sub-committee, 1.45 p.m.)
June 11th.—Summer Meeting of the Lancashire Division, N.V.M.A., at Chester. (See Notice.)
June 12th.—Meeting of the Central Veterinary Society at the Royal Veterinary College, N.W.1, 2 p.m.
June 13th.—R.A.V.C. Annual Dinner, Grosvenor House, London.
June 18th and 19th.—N.V.M.A. Committee Meetings, 36, Gordon Square, W.C.1.
June 20th.—N.V.M.A. **Council Meeting,** at the Connaught Rooms, Great Queen Street, Kingsway, W.C.2.
June 25th.—Meeting of the South-Eastern Division, N.V.M.A., at Frant, Nr. Tunbridge Wells (The Wellcome Veterinary Research Station), 11 a.m.
June 26th and 27th.—R.C.V.S. Written Examinations.
July 28th—Aug. 1st.—N.V.M.A. Annual Congress in Edinburgh.

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Ministry of Agriculture — Veterinary Appointments

At a Special Meeting of Council N.V.M.A., held in London on May 8th, the resolution embodied in the following letter to the Secretary of the Ministry of Agriculture and Fisheries was passed:—

May 20th, 1947

The Secretary,
Ministry of Agriculture and Fisheries,
55, Whitehall,
S.W.1.
Sir,

I have been instructed to inform you that a Special Meeting of Council of the N.V.M.A. was held in London on Thursday, May 8th, and the following resolution was passed:—

"That this Council withdraws its refusal to accept from the Ministry of Agriculture and Fisheries advertisements for official veterinary appointments to the Animal Health Division for publication in *The Veterinary Record* and authorizes their insertion free of charge.

The Council reiterates its strong protest against the inadequate salary scales imposed, which are unacceptable, and intimates to the Ministry of Agriculture and Fisheries that its views on the position will continue to be conveyed to members of the Association, particularly when any official advertisements of appointments are published in *The Veterinary Record* or other journals."

I am, Sir,
Your obedient Servant,
F. KNIGHT,
General Secretary.

This resolution indicates the Association's continued disapproval of the new salary scales for veterinary officers of the Animal Health Division. It further makes clear the Association's decision to accept the challenge of the Ministry's proposed advertisement as the surest way now available of demonstrating the justice of the Profession's case.

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Veterinary Educational Trust

Totalisator Charity's £10,000 towards the Newmarket Research Station

The Home Secretary has given his approval to the gift of £10,000 from the Racecourse Totalisator Charity Trust to the Veterinary Educational Trust.

In announcing Mr. Chuter Ede's approval, Mr. G. S. B. McNaughton, Secretary to the Totalisator Charity Trust, states that the grant of £10,000 is a contribution towards the capital cost of the equipment of the Veterinary Educational Trust's Equine Research Station at Newmarket.

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When the Duke of Gloucester visited the private view of the late Mr. Tresham Gilbey's sporting pictures at Grafton Street, W.1, recently, Dr. W. R. Wooldridge, Scientific Director of the Veterinary Educational Trust, was presented to him. The Duke asked many questions as to the progress of the Trust's activities. He also manifested great interest in the work being accomplished generally by the veterinary profession in the matter of animal health.

The proceeds of the sale of the illustrated catalogue of the Tresham Gilbey picture dispersion, which takes place at "Christies" on May 30th, are for the benefit of the Trust.

Although the collection contains many fine examples of most of the great sporting artists of the 18th and early 19th centuries, it was John Ferneley to whom Mr. Gilbey gave his greatest allegiance and in the ten works by that master it will be noticed that the emphasis is always laid upon the horse rather than on the more popular taste for mounted figures.

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The Bedfordshire Committee of the Trust will have a stand at their County Show in July next.

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TUBERCULIN TESTING

ADOPTION OF THE SINGLE INTRADERMAL TEST

The Ministry of Agriculture and Fisheries announces that the date for the introduction of the single intradermal tuberculin test for all official tests of attested herds and T.T. herds has been fixed for June 2nd, 1947.

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Oversea Veterinary Appointments

The N.V.M.A. for some time past has been endeavouring to persuade certain oversea Government authorities to improve the conditions of service for veterinary officers. In some it has been unsuccessful up to the present and certain oversea Governments may have decided to advertise for veterinary officers in the lay press and elsewhere; these advertisements may appear at any time.

It is suggested that any members of the N.V.M.A., seeing such advertisements and being interested should communicate with the General Secretary, N.V.M.A., 36, Gordon Square, W.C.1. An explanation will then be given of the reasons which have caused the Association to decline to accept advertisements of these posts for insertion in *The Veterinary Record.*

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Questionnaire to Divisions, N.V.M.A.

Will members of the Association, who have not already done so, kindly complete the questionnaires sent to them by their Divisional Secretaries, and return them without delay either to those deputed to collect these replies in their Divisions, or, if no special arrangements have been made, to the General Secretary, N.V.M.A., direct.

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Children's Visit to Denmark

Through its President, Dr. N. Plum, the Danish Veterinary Association has once again extended an invitation, *via* this Associa-

tion, to the children of British veterinary surgeons to visit Denmark during the summer holidays and has, in fact, already sent a list of Danish veterinary surgeons who would like to be their hosts. In view of the success of last year's visit, the N.V.M.A. has accepted this kind offer and the General Secretary would be pleased to hear from any members who would like their children to go. Arrangements can again be made through Cook's, but there is some urgency in the matter of fixing travelling facilities and those interested are asked to write in to the Association without delay.

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PERSONAL

Appointments.—The Colonial Office announces the appointment, in the Colonial Veterinary Service, of Major C. D. Hopkins, M.R.C.V.S., as Veterinary Officer, Uganda. Mr. R. A. Hammond, M.R.C.V.S., Senior Veterinary Officer, becomes Deputy-Director of Veterinary Services, Kenya.

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Births.—Carnegie.—On May 13th, 1947, to Marjorie, wife of W. K. Carnegie, B.SC., M.R.C.V.S., Brampton, Cumberland, a daughter.

Lamont.—On May 12th, 1947, to Diane, wife of Alasdair A. Lamont, B.SC., M.R.C.V.S., of Croham Hurst, Picket Piece, Andover, a son (Andrew John).

Rose.—On May 15th, 1947, at "Greenacres," Leek Road, Cheadle, Stoke-on-Trent, to Margaret, wife of William K. Rose, M.R.C.V.S., a daughter.

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Marriages.—Kay—Brown.—Robert S. Kay, B.V.SC., M.R.C.V.S., of Rotherham, only son of Mr. and Mrs. S. Kay, "St. Margaret's," Ashby de la Zouch, to Mary, only daughter of Mrs. and the late Mr. S. V. Brown, of Mossley Hill, Liverpool, at All Hallows Church, Allerton, Liverpool, by the Rev. H. H. Symonds.

Tutton—Oddie.—On April 19th, 1947, at St. Cuthbert's Church, Lytham, Edward Allen Tutton, M.R.C.V.S., B.V.SC., of Whaley Bridge, Cheshire, to Patricia Oddie, of Lytham. Major Tutton is now in practice in Brackley, Northants.

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Forthcoming Marriage.—Hirst—Bodenham.—The engagement is announced between Basil J. Hirst, M.R.C.V.S., elder son of Mrs. A. V. Hirst, "Limberlost," Moseley Grove, Uphill, Somerset, and Mr. P. C. Hirst, New Milton, Hants, and Audrey, younger daughter of Mrs. A. Bodenham, Anton House, Weston-Super-Mare, and of the late Mr. H. T. F. Bodenham, of Bewdley, Worcestershire.

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Our readers will be sorry to hear of the illness of Mr. John Willett, M.V.O., M.R.C.V.S., and will wish him a speedy recovery.

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Retirement of Mr. William Nairn, C.B.E., M.R.C.V.S.

Blairgowrie Farmers' Tribute

The retirement is announced, after 42 years in practice, of Mr. William Nairn, C.B.E., M.R.C.V.S., of Erichtbank, Blairgowrie, whose great work for the advancement of his profession was recognized by his election to the presidency of the National Veterinary Medical Association in 1933 and, ten years later, to that of the presidency of the Royal College of Veterinary Surgeons during its Centenary Year, when he was awarded the C.B.E.

Belonging to old farming stock in the Lothians, Mr. Nairn went to Blairgowrie in 1904, building up a large practice. In 1928 he was elected president of the Scottish Metropolitan Division in Edinburgh, and also of the Scottish branch of the National Association. For three years he was a governor of the East of Scotland College of Agriculture. In 1934 Mr. Nairn went to America, receiving a presentation from his numerous clients before leaving. In the same year he was appointed a governor of the Royal (Dick) College, Edinburgh.

To mark his retirement Mr. Nairn was recently honoured at a dinner held in Blairgowrie Town Hall by the Blairgowrie Branch of the National Farmers' Union, when many tributes were paid to his sterling character and to his able and ceaseless efforts on behalf of the farming community, and a presentation was made.

The Branch President, Mr. Alan H. B. Grant, Thorn, who is Junior Vice-President of the Union, presided (reports the *Blairgowrie Advertiser*) over a company of about 170, including lairds, farmers, members of the veterinary profession, business and professional men, and many of their ladies.

Welcoming the company, Mr. Grant said he considered it a great privilege and honour to preside over that company, gathered to make recognition of Mr. Nairn's long service in the area. He had been a good friend to most of them, not only by his work as a veterinary surgeon, and his services to the raspberry industry, but in every sphere of life. At the same time they must not forget his able lieutenant, Mrs. Nairn, who, he thought, had been Mr. Nairn's best assistant.

Major Bruges, Laighwood, said he esteemed it a great honour to have been asked to perform the important duty of making a presentation to Mr. and Mrs. Nairn. He dared say the reason he was asked was because he was one of Mr. Nairn's oldest clients. During the years Mr. Nairn had lived in the district he had built up a huge practice, and his personal worth and merit were of a high standard indeed. Mr. Nairn had been endowed with even more than a fair share of brains. He took a great interest in his work and was a great lover of animals. His integrity, sincerity and charming disposition made him a great favourite with everyone. Not only was he esteemed by the whole community: he had been honoured many times by the veterinary profession as an outstanding personality. He was one of Nature's perfect gentlemen, and was always willing to help anyone requiring his services, rich or poor; his ambition and creed was to benefit his fellowmen. Mr. Nairn was a man of liberal and progressive views, and by sheer hard work and by keeping well abreast of advancements in his profession he had attained a reputation second to none and his name was known far and near. Major Bruges enumerated some of the high posts Mr. Nairn had held in the veterinary world, and said that in recognition of his fine work His Majesty had conferred on him the well-deserved honour of C.B.E. Major Bruges said he had always had a great respect for the veterinary profession, and farmers owed them a debt of gratitude for all that had been done for them in the way of research, in which their guest had been a leader. Possibly he (the speaker) would not have been standing there that night if not for the good work done in discovering preventatives for many of the diseases afflicting their livestock. Referring to Mr. Nairn's association with the raspberry industry, Major Bruges said he had represented the local fruitgrowers at conferences with Government Departments in London and had been successful in negotiating prices satisfactory to most of the growers, who were sometimes not easily satisfied. Mr. Nairn was a very humorous person and loved "to pull your leg a long long way, without you feeling any ill effects." To use a horsey expression, he was "free from vice, exceptionally mild tempered and you could not yoke him wrong." He was delighted that Mrs. Nairn was associated with the presentation. As they knew, Mrs. Nairn was a lady of many talents and was much respected by the whole community. On behalf of the subscribers, it gave him great pleasure to hand over the gifts to Mr. and Mrs. Nairn, with the hope that they would be long spared to enjoy using them. He wished Mr. and Mrs. Nairn long life and great happiness.

The gifts consisted of a silver salver, a tea-set, a tea trolley and a silver whisky flask.

The salver was inscribed: "Presented to William Nairn, C.B.E., M.R.C.V.S., and Mrs. Nairn by their many friends in Blairgowrie district on the occasion of Mr. Nairn's retiral after 42½ years' service to the community."

Mr. Nairn's Acknowledgment

In reply, Mr. Nairn said he thought it must be almost unique in Scotland for a veterinary surgeon to receive in his lifetime two public presentations from his clients and friends, and, looking back he felt that his lot had been cast amongst very kindly people. Not only on these two occasions, but on many others during these 42 years, he had been aware of that kindness. There had been many changes since he came to Blairgowrie, one of the saddest being that many old friends had passed on. There were few men occupying a farm to-day who were on that farm when he came. The horse that used to be the glory of the veterinary profession was also passing on, driven out by the machine, but he thought that before it was completely driven out the machine would have to improve and be more suitable for every task on the farm than at present. He referred to the greatly improved facilities now existing for the scientific training of veterinary students, to the advances made in eradicating or curing animal diseases, particularly tuberculosis, and to his work in what he called "the politics of his profession." He expressed his sincere thanks to the Committee who had organized the function, to the subscribers for their most generous gifts, and to his good friend, Major Bruges, for the kind things he said. His wife and he were sincerely grateful for all this kindness. It would always be a pleasant memory to them. He might almost become flowery and say that in the evenings, when they strolled in the garden of memories, this night would be one of the brightest flowers in it. He thanked them all very sincerely.

The toast of "The Veterinary Profession" was proposed by Mr. S. Thompson, Alyth and Kinpurnie, who said that veterinary

science had progressed enormously in the last 40 years and Mr. Nairn had taken a full share in research work. Though retired, they hoped he would continue to take an interest in research work—in particular to help the profession to find a cure for grass disease in horses. The profession would never give up trying to find that cure and he was confident they would succeed.

Replying, Principal Mitchell, M.C., M.B., CH.B., B.SC., M.R.C.V.S. Royal (Dick) Veterinary College, President of the National Veterinary Medical Association, said he never felt prouder of his profession than that night, knowing that that large company had met to honour Mr. Nairn, one of the greatest men they had had in the profession during his (the speaker's) lifetime. He wondered why they had allowed Mr. Nairn to retire when he was at the zenith of his powers. He spoke of Mr. Nairn's work as a Governor of the Royal (Dick) College, commenting especially on his shrewd common sense and his successful endeavours towards progress in veterinary science. At the moment there was no man whose reputation stood higher in the profession than Mr. Nairn's.

"Agriculture" was proposed by Rev. A. Wylie Smith, who referred to Mr. Nairn as one who adorned his profession, and responded to by Mr. David Lowe, Gladsmuir, East Lothian, Senior V.P. of the N.F.U., who said that Mr. Nairn had been one of the keenest men in the country in research work in connection with raspberries as well as in his own profession.

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Retirement of Mr. H. J. Lowe, C.B.E., M.R.C.V.S.

On April 12th, 1947, H. J. Lowe, C.B.E., M.R.C.V.S., retired from the post of Director of Veterinary Services, Tanganyika Territory, after serving the Territory for 29 years.

"The retirement of Mr. Lowe (writes a correspondent) is a severe loss to the Department whose destinies he has guided with such conspicuous success for many years. The effort to build up an efficient Department of Veterinary Science and Animal Husbandry has been long and sustained, and it has, as members of the Colonial Veterinary Service will know, been an uphill fight for recognition both of the value of veterinary services and of the indispensable role they must play in the development of the animal husbandry of the Territory.

"Mr. Lowe made the field of animal husbandry his own; he was not content with the mere saving of animal life but took every possible step to see that the animal products were used and that the increase in stock which followed the immunization of cattle against disease did not cause over-population. To this end he organized and fostered a cattle marketing system which during the war years dealt with 1,667,136 cattle, having a value of £3,216,224—truly a remarkable achievement when it is remembered that in the early 1930s there was, for all practical purposes, no marketing system at all. The soil erosion question has always been foremost in his mind and activities and the conservation and restoration of the pastures of the Territory has made good progress under his able guidance. All aspects of animal husbandry have received attention and a sound basis has been laid in many lines of work—for example, clarified butter and hides and skins production—for future expansion.

"Mr. Lowe served for four years in France in the first German war and joined the Colonial Veterinary Service in 1918. He was promoted to the rank of Senior Veterinary Officer after five years' service and in 1938 he became Director of his Department. He was awarded the C.B.E. in 1943 and was the first veterinarian in the Territory to serve on the Legislative Council. Throughout he has been a fighter for the rights of his staff and this was well typified by his encouragement of the local division, and later the branch, of the 'National.'

"It is a matter for regret that so large a part of the labours of Mr. Lowe had to be diverted to the perpetual struggle against rinderpest, notably when rinderpest swept down to the Northern Rhodesian border in 1939. He was called upon to organize an international campaign against the disease, a campaign which was entirely successful and which stopped the spread of the disease into the southern half of the African continent and so averted enormous losses of stock at a time when the Empire needed all her resources.

"Their many friends throughout Eastern and Central Africa and all the members of the Department are glad to know that Mr. and Mrs. Lowe are to settle in Tanganyika, so that we shall not lose contact with them, and one and all wish them great happiness and joy in their retirement."

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Mr. John Kirkwood, O.B.E., B.SC. (AGRIC.), N.D.A., N.D.D., C.D.A. (HONS.), has been appointed to the post of Principal of the West of Scotland Agricultural College, which has been vacant since the retirement of Principal W. G. R. Paterson in 1944.

R.C.V.S. ANIMAL MANAGEMENT EXAMINATION
LIST OF SUCCESSFUL CANDIDATES

Edinburgh:

Baxter, J. T.
Branagan, Denis
Byrd, Miss Bridget
Clark, James
Clemo, J. A.
Condy, J. B.
Cooke, C. D.
Cormack, J. G.
Cragg, D. A.
Crawford, Miss H. F.
Crighton, W. G.
Dean, T. S.
Fraser, L. D.
Glendinning, W. A. D.
Hardy, Henry (Credit)
Harrison, K. S.
Hay, A. G.
Hockenhull, E. W. F. (Credit)
Logsdon, Miss S. E.
McLaughlin, John
Madden, D. H. L.
Magowan, J. W. (Credit)
Marr, T. G.
Martin, Harold
Mitchell, Miss H. M.
Murchie, Kenneth
Murchie, William (Credit)
Parkes, W. D. C. (Credit)
Peacock, J. M. (Credit)
Plumner, G. A. (Credit)
Raine, W. A. S.
Robson, T. W.
Ross, J. P.
Rylands, J. M. (Credit)
Shepherd, A. G.
Smith, I. A.
Sutherland, F. R.
Vicary, R. W. G.
Waterston, R. F.
Wight, Graham
Williamson, P. T.

Glasgow:

Andrew, A. S.
Angus, C. G. T.
Baker, Norman
Beck, Robert
Black, A. M.
Boyd, H. W.
Buchanan, John (Credit)
Bunyan, F. S. R.
Crighton, G. W.
Dexter, M. R.
Dickson, Ian
Doyle, Joseph
Forrester, W. A.
Fraser, A. F.
Gallagher, Peter (Credit)
Gracie, Archibald (Credit)
Gross, Miss Irene
Harkness, A. C.
Hosie, K. F.
Hyatt, Miss J. M.
McCrone, R. R.
McDougall, J. S.
Millar, J. S.
Mowat, G. M.
Ricketts, Miss B. C.
Robertson, W. W.
Russell, D. A.
Sanderson, John
Shepherd, Gordon
Stanhope, D. T.
Strachan, T. A. (Credit)
Sturdy, I. C. (Credit)
Tattersall, D. J.
Thorburn, H. F.
Wilson, Miss J. S. S.

Liverpool:

Blackburn, P. W. (Credit).
Briggs, Miss M.
Buxton, Miss M. A.
Cartmell, W. B.
Croft, D. C.
Cross, M. H. (Credit).
Cunningham, B.
Davies, J. K.
Edwards, R. T.
Hughes, D. A.
Humphries, Miss H. T.
Jessop, Lewis.
Jones, Ceiriog (Credit).
King, J. J.
Leam, G.
Locke, R. D.
Magee, Miss M. B. (Credit).
Meredith, F. W.
Monk, Miss M. A. (Credit).
Moss, Roy.
Needham, B.
Owen, L. N.
Pretty, P. M. S.
Schwarz, R. A. J.
Short, Maxwell.
Smith, G. S.
Stubbs, G. B. (Credit).
Taylor, H. S.
Taylor, L. A.
Theobald, Leslie.
Twist, J. C. (Credit).
Unsworth, W. P.
Wannop, C. C.
Ward, Miss G. H. (Credit).
Wells, C. F.
Westcott, E. V.
Williams, K. T.
Woodall, H.
Woolfenden, Miss Enid.

(*To be continued*)

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ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

SHEEP SCAB:

Merioneth.—Brynbwlaw, Llandderfel, Merioneth (May 15th).

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The Royal Agricultural Society of England is awarding its gold medal to Lord Bledisloe in recognition of his services to agriculture and to the Society, with special reference to the goodwill mission to Australia and New Zealand which he had just completed.

ECONOMIC SALVATION FROM AGRICULTURE

Mr. James Turner Presides at Hague Conference

M. S. L. Mansholt, the Dutch Minister of Agriculture, appealed for an international agreement to stabilize farm prices when he opened the first annual conference of the International Federation of Agricultural Producers at the Hague, on May 13th.

He said that only if farmers throughout the world were guaranteed stability would they do their utmost to achieve maximum production. They must not have the fear that their produce would become a drug in the market.

"There is no great elasticity in the demand for agricultural produce," he said. "Increase of production is the slogan heard everywhere. There can be no doubt about the need for it, for there are still nations whose possibilities for consumption are quantitatively and qualitatively far below every reasonable minimum."

Mr. James Turner (Great Britain), president of the conference, said that an agriculture in full production, with its products distributed in an orderly manner, introduced to the world the way to economic and social salvation, prosperity for all peoples, and a degree of contentment that left no excuse for war. The only proviso was that those two-thirds of the world's population who composed the man-power of agriculture should find such stability as would lead to continuity of production and service.

"We are a long way from satisfying the minimum health standard of nutrition," Mr. Turner declared. "It is time the nations delved below the surface of power politics, pressure groups, minority problems, and the like and reached the roots of progress, which are to be found in the vast potential resources of the land. So long as this fundamental truth is obscured the ideal of a world of plenty cannot be achieved, and failure would be the greatest indictment of a generation pledged to build permanent peace."

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YIELD STANDARD FOR DAIRY CATTLE AT SHOWS

"The idea that only cows with good yields should be exhibited at shows is spreading," states the *Farmers' Weekly* in a recent issue and proceeds: "Last year a group of Jersey breeders put on a show of cattle where every female exhibit (or her dam, in the case of young stock) was of Register of Merit standard. Now, the Eastern Counties Dairy Shorthorn Association—one of the most progressive of such bodies affiliated to the Shorthorn Society—is staging a show at Cambridge on May 15th where every cow exhibited will have given up to Advance Register standard—1,000 gallons from a mature cow, 850 gallons from a second calver calving under four and 750 gallons for a heifer calving her first calf under three. It can't be long now before *all* dairy cattle at all shows will have to produce similar evidence of ability."

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Veterinary surgeons at the Hunters' Improvement Society's National Show at Shrewsbury on June 24th next are Majors C. W. Townsend, F.R.C.V.S., Long Stanton, and W. F. Aston, M.R.C.V.S., Shrewsbury.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the N.V.M.A.

Correspondents should write as briefly as possible and letters should not exceed 350 words.

NEWCASTLE DISEASE

Sir,—With reference to Dr. Blount's letter in this week's issue of the *Record* referring to the article on "Newcastle Disease" by Asplin and myself, Dr. Blount suggests that the article is incomplete since it bears no reference to immunity. I would point out, however, that the paper did not pretend to be a review of Newcastle disease, but was prepared at short notice in order that the attention of the profession could be drawn to the recurrence of this disease in the country and to outline the salient features of the disease, and the veterinary surgeon's obligations under the Fowl Pest Order.

The vaccine referred to by Dr. Blount and used successfully in India was originally elaborated at Weybridge under the direction of Mr. N. Dobson and the results of the work were published jointly by Iyer and Dobson in *The Veterinary Record* in 1940. The vaccine was a modified virus attenuated by serial passage through embryonated chicken eggs. A considerable amount of research work has been done on the production of immunity in Newcastle disease, and the whole subject is dealt with at considerable length by Brandly *et al.* (1946), who describe methods and procedures for the preparation of live-modified as well as killed-virus vaccines from embryonated chicken eggs.

A formalized vaccine is being used experimentally by the United States Department of Agriculture at the moment. Brandly and his co-workers showed that the addition of formalin or irradiation by ultra violet light produced a highly immunogenic killed vaccine, while the use of several adjuvants such as lanoline and aluminium hydroxide increased and prolonged active immunity in fowls.

Newcastle disease is exotic to Great Britain and the country has remained free from the disease for relatively long periods. Vaccination would only appear to be indicated if the present slaughter policy is ineffective and the disease becomes endemic in the country.

Yours faithfully,

Veterinary Laboratory, Weybridge. R. F. Gordon.

April 12th, 1947.

Iyer, G., & Dobson, N. (1940.) *Vet. Rec.* 52. 889-894.
Brandly, C. A., Moses, H. E., Jungherr, E. L., & Jones, E. (1946.) *Amer. J. vet. Res.* 7. 307-331.

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"INFECTIOUS CATARRHAL FEVER OF DOGS"

Sir,—May I add a few remarks to the current topic of this disease of young dogs simulating canine distemper? Mr. Townson's recent communication has in large been the experience shared by myself over the last 12 months. It would be of great benefit to us all to attempt to arrive at some definite conclusions. I am prompted to write this now, in view of nine recent cases of valuable dogs contracting similar trouble, all having been immunized at four months old with vaccine virus prophylactics and also of other cases too numerous to mention, in animals either immunized, or thought to have already had distemper. A large proportion have inclined to nervous symptoms, in spite of extensive serum therapy, sulpha drugs, penicillin and other curative agents.

My own opinion as to aetiology inclines to the view of a so far undetected strain of distemper virus, since so many of the symptoms appear identical to the distemper we know.

It would be interesting and enlightening to hear views of other members.

Yours faithfully,

May 10th, 1947. "T. M. O."

DISEASES OF ANIMALS ACTS, 1894 TO 1937, AND AGRICULTURE ACT, 1937 (PART IV).

Summary of Returns of Confirmed Outbreaks of Scheduled (Notifiable) Diseases

Period	Anthrax	Foot-and-mouth	Fowl Pest	Parasitic Mange*	Sheep Scab	Swine Fever
April. 1st to 15th, 1947	4	—	34	—	1	—
Corresponding period in—						
1946	8	—	—	—	—	21
1945	3	4	—	1	—	54
1944	12	4	—	—	2	29
Jan. 1st to April 15th, '47	20	83	61	1	15	14
Corresponding period in—						
1946	37	20	—	4	34	192
1945	37	63	—	4	33	331
1944	75	19	—	5	58	181

Note.—The figures for the current year are approximate only.
* Excluding outbreaks in Army Horses.

Tuberculosis Order of 1938

The number of bovine animals slaughtered under the Tuberculosis Order of 1938 during the period January 1st to March 31st, 1947, was 1,555.